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ENTOMOLOGY

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF

THE AMATEUR ENTOMOLOGISTS' SOCIETY

VOL. 3 NO. 23. PRICE SIXPENCE FEBRUARY 1938

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The next Bulletin will be issued about mid March. All subscriptions should now be paid and filled-in Questionnaires returned. The March Bulletin closes for press four days after the sending off of this issue.

COMMITTEE

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AMATEUR ENTOMOLOGISTS' SOCIETY

The minimum annual subscription to the Society, including the year's Bulletins, is:-

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This should be sent to the Hon. Treasurer, B.A. Cooper, at 61, Okehampton Road, London, N.W.10. Postal Orders may be made payable at Kensal Rise, N.W.10. Bra nch Office. The subscription of those joining later in the year than September 1st, covers the period till the end of the year in addition to that of the following year. Back numbers are obtainable at two thirds the published price.

Authors desiring "extras" (reprints of their article alone) may obtain them by ordering at the time of sending in the contribution at the following rates: First twenty ninepence, each succeeding twenty threepence per double side of printing. Typing appears as in the Bulletin, other matter on the same page being omitted.

The Hon. Secretaries will be pleased to forward a specimen copy of the Society's Journal and a prospectus to any non-member likely to be interested, on receipt of name and address. They will also gladly send prospectuses to those members who may be able to make use of them.

Will correspondents please remember that a reply can only be given other than through the Bulletin if they enclose a stamp for return postage. If contributors desire return of their MSS after publication, would they please mention this when writing, and also enclose the required postage stamp. We are able to reproduce SIMPLE drawings and diagrams if authors send us a facsimilie drawn in Indian ink with the size they wish the reproduction (which must not exceed 7 ins. X 11 ins. in area) to appear.

The exchange column is free to all members, and the Editors hope that full use will be made of it. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus, and live insects, leaving that of set, pinned and unpinned specimens till they have had more experience.

The Editors offer no guarantee for any articles offered in the Exhhange column, and they are in no way to be held responsible should the privilege allowed be abused. Unless members state to the contrary, exchange notices will be inserted in the Bulletin once only. For addresses, please refer to the membership list and subsequent membership changes list.

Anyone at present not recording migrant lepidoptera and dates of first noting the species on the phenological list each year, who would care to note down and report anything connected with these subjects that he might observe, should write to B.A. Cooper or C.H. Veale for free literature and information. Any further information in migration will be willingly given by Captain T. Dannreuther, Windycroft, Hastings. and on Phenological Recording by Major H.C. Gunton, Rathgor, Gerrards Cross, Bucks

Books mentioned under the heading "Received" may be borrowed from B.A. Cooper, borrower paying postage both ways.

If there are any members living abroad or in the provinces, who are in the unfortunate position of not always being able to get the book they desire, we shall be glad to order it for them, postage being additional to the published price.

THE AMATEUR ENTOMOLOGISTS' SOCIETY
although of general interest to all amateur collectors, sets out to assist in every possible way, the less advanced collector and student of entomology. Beginners are especially welcome. If not satisfied with the Bulletin, write to the Editor

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This page is reserved for members' advertisements (not exchanges), dealers' notices, etc., at cheap rates. For advertising rates, apply to the ADVERTISING SECRETRAY, Mr. A.N. BRANGHAM, 1c, HOWITT ROAD, BELSIZE PARK, LONDON, N.W.3. (Telephone number: PRImrose 6073). Advertising copy should be sent to Mr. Brangham by the 12th. of the month before the next issue of the Bulletin is published.

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol. 3 No. 23 February 1938

The Society has to record a very successful season as regards its membership and activities during 1937. Out total of twenty at the close of 1935 had risen to 53 in the succeeding twelve-months, and now we see the year 1937 finish up with 120. At the same time we hear from members that many of them have been able through the exchange notes to meet or correspond with others and to make numerous exchanges. This is very satisfactory, but it should be possible for beginners who have nothing to exchange to correspond with other members, and thus obtain help in their collecting. It is difficult to see how this may be encouraged, but we are hoping, in the London district at least, before long to arrange one or two meetings for the exhibition of specimens or demonstration of collecting methods. Apart from this, however, we must still hope that members will endeavour to get into correspondence with others, whether living in the same district or elsewhere, so that we may fully deserve our titel of Society, and not appear to be merely the publishers of a magazine.

The total number of pages issued in the year (excluding purely advertising matter) was 117, and this, together with five pages of supplement, completes the whole volume. (Sundry reprints, circulars and lists omitted). This compares very favourably with 85 pp., 6 sup. of the previous volume of thirteen issues. In addition the average number of words per page has risen considerably, so that the total amount of matter is even greater than appears. The total number of exchange notes published was 52, as against 28 the year before. This shows a slight dropping off when compared with the doubling of membership, but it is very satisfactory when compared with the figures of other magazines (allowing for the fact that most of our notices appear once only).

The years advertising has been on the whole successful, though, as might be expected, the cost per new member is increasing. In 1935 the cost ranged round about 6d per newcomer, but averaging the whole year 1937, it works out at something like 2/2d each. This does not include postage incidental to new members, which usually works out at about 6d each, nor does it include those newcomers due to recommendation by present members. Definite figures are not easy to arrive at since some do not tell us how they heard of us in the first place, while others may have seen our advertisements in more than one publication, or have been recommended by others who wrote for a specimen Bulletin but did not jointthemselves. L.W.Newman's lists have been the most valuable source of introduction, while the Exchange & Mart and D.E.Ballinger's lists have followed as the next best advertising media. The Meccano Magazine produced no members after an expenditure of 16/-, and was the worst investment that we made. We have to thank Messrs. Ballinger, Head and Ford for their help towards gaining an increase in our numbers, and also to all those members who have recommended us to their friends. We hope they will continue to use their influence during the coming year.

The average number of Bulletins produced during the year was 217 per issue, of which about 180 were distributed immediately. We can therefore guarantee a full circulation of 200 for 1938, and since well over this figure will be printed each month, it is possible that this figure may be very much exceeded.

Coming now to the year's balance sheet, we see that the sums received in advance do not equal the amount carried forward into the general account. This is explained by the fact that most of these subscriptions are from new members who have joined since September last, and whose subscriptions therefore cover a proportion of that year's expenses. In addition, there are a number of small debts owing, while the sum of two pounds has been lent to the Reprint Fund, to be returned when that fund has been placed fully on its feet. Allowing for this, therefore, there is a rather better sum brought forward than at this period of last year. The separation of the Advertising Fund from those of the

Reprint and General Funds is done solely to facilitate ease of working, and so that we can instantly calculate whether the Reprint Fund is producing the profit desired to make it a paying proposition. The ultimate aim of the latter is to build up a capital for the publication of reprints and the like, and eventually to supplement the income due to the General Fund. It will be seen that the Reprint has very nearly paid for itself, and is expected to produce a small profit before long. Up to the present we have only been able to obtain 6-point data labels, but we have now been able to obtain the finer 4½-point (diamond) type recommended for label production, at small additional cost. We cannot, however, promise to obtain these at short notice. The British Museum publications consist of the two booklets on migrant Lepidoptera - we have rather more of "Butterfly Migrations in the Tropics" than of that concerning British migrants. We have also purchased a small printing machine for the printing of the heading to Bulletin covers. We estimate that this will mean a small saving the first year, although we expect the machine will not be required for this purpose afterwards, as we hope to have the whole Bulletin printed in 1939. We intend, however, to use the machine then for the printing of notepaper headings and so forth. The machine is quite unsuitable for the printing of the Bulletin ourselves, although our earlier prospectuses were done on it. We can also do small printing jobs for members - profits at first will be used for the purchase of additional founts of type. The sum of £2: 10: - was also borrowed during the year, but this was repaid soon after when the Reprints from Volume 1 had been sold.

REVENUE			EXPENDITURE		
Brought forward		£1: 13: 11½	Prod. Bulletins		£12: 17: 4
Current subs.	£14: 3: 0		Wrappers, postage	£5: 17: 8½	
In advance	£9: 4: 0		Deduct st. recd.	£1: 11: 11½	
		£23: 7: 0			£4: 5: 9
Sundry others		17: 3	Sundry others		£1: 10: 2
Donations		£7: 16: 8	Advertising		£5: 6: 11½
Reprints	£3: 0: 0		Reprints	£3: 4: 6	
Binds, B.M.bks	£1: 6: 1		Binds, B.M.bks.	£1: 11: 0	
Data labels	13: 8		Data labels	10: 3	
		£4: 19: 9	Printing machine	£1: 0: 0	
					£6: 5: 9
			Carried forward		£8: 8: 8
		£38: 14: 7½			£38: 14: 7½

The amount in hand (31-12-1937) is now divided as follows:-

General Account	£5: 4: 11½
Reprint Account	£-: 14: 0
Advertising Acc.	£2: 9: 8½
	£8: 8: 8

During the year 1938 we shall produce a Bulletin very much on the lines of last year's, except that with an increased membership we should be able to provide a better selection of articles, and, we hope, better reproduction. We hope this year to pay for the duplicator (which cost £5: 12: 6, and which amount is still outstanding) and to enlarge our funds so as to be able to bear the changeover to a printed magazine neat year. We had hoped that this issue should be printed, and accordingly sent out a duplicated circular to a large proportion of last year's enquiriers, but the response was not sufficient to enable us to undertake the changeover year A printed magazine would consist of eight pages (sides of print) inside a paper cover, size of page being about the same as for the Entomologist. It follows that very much less matter could be printed per issue, meaning that exchange notices, editorials, lists of members, long articles and those requiring diagrams would have still to be duplicated. In addition the cost per issue would be in the region of £4, so members will see by comparison with the above table of expenditure for last year how this compares with our present admittedly unsatisfactory method.

Not many members have yet returned their questionnaires. Those who have done so make many good proposals, and we are sure that our magazine would be beyond reproach if we had time and money to carry them all out. Many ask for more articles on orders other than Lepidoptera, and especially on Hymenoptera and Diptera (although one goes so far as to suggest that our magazine should touch nothing other than the

Lepidoptera). Others ask for more book reviews, especially of older books, which the beginner may otherwise never hear of. The Editor warmly seconds both these suggestions. Surely we must have some non-lepidopterist or coleopterist who would be able to contribute either a single article on the whole order or several smaller items for us to include under the heading "calender"! Again, have we anyone with developed critical talents who has access to a suitable library, and who might be able to tell us what and what not to read of entomological literature past, present and future? Another series which we had hoped would become popular is that of hints suitable for the real beginner; but, alas, matter wherewith to fill it has not been forthcoming; we hope that our more experiemced members will demonstrate their experience to a greater extent in future volumes.

In conclusion, we would like to thank all those who have been of assistance to the Society during the past year; to our typists, who have so ably transcribed much illegible writing, Messrs. Glanfield (J.14), Daniels (J.15-18, 22), Brangham (J.19-21), and especially to a non-member, P.C.Greenwood, who typed the Reprint at very short notice on a most unsuitable machine; to D.E. Ballinger for duplicating Journals 14 and 15, and even more to C.H.Veale and family for devoting many evenings per month for duplicating, stapling and sending off of the remaining Bulletins of the year; to J.E.Knight who has offered to take over the running of the Reprint and business side of the Society's affairs with hopes of developing them greatly; to A.N.Brangham for the addition of an advertising section to the Bulletin; to A.J.Simpson who has recently offered to print the Bulletin headings and other matter needed by the Society; and also to Messrs.R.Hilliard and A.Glanfield who have carefully audited the Society's account and receipt books and made suggestions for the future.

B. A. COOPER
Hon. Treasurer and Editor

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ENTOMOLOGY IN CHINA

(Continued from Vol. 2, page 106)

When the Cicadas got on my nerves, our Chinese boy, understanding my rather expressive language, would produce his net and proceed to collect the offenders into a large tin. Just what he did with his captures I never found out, but he was a Southern Chinese from Canton, and in Hong Kong one sees many queer articles of food displayed in the Chinese chow shops, including beetles, snakes and lizards. I am told they are fond of dog, and even mice, so maybe those Cicadas were not wasted.

The Chinese net is very simple and very effective. A wire ring about 4 to 6 inches in diameter on the thin end of a long bamboo pole is all they require, stretching spider webs (and this webbing is very strong) across the ring until a fairly good meshing is formed. They keep a steady gaze up into a tree until a Cicada is spotted, and a light touch with that webbed ring puts paid to the insect's song. I have seen dozens caught and never one get away from the web. Small boys used to hawk the Cicadas in tiny cages made of bamboo splints or strong reeds, but I never saw one sold.

But the trees held more than Cicadas, and when Summer was well advanced how I welcomed a heavy shower or a real stiff breeze. A heavy rain was best, as it freshened everything up, and the toads came out in full force to feed, livening up the usually lonely paths. Now one could collect from the pathways larvae of all shapes, sizes and colours. I knew very few by name, but Hawk moth larvae were generally in the majority. One species was very beautiful and seemed to have all the colours of the rainbow. On the first occasion I saw them I picked up a few and held them in the plam of my hand to admire their beauty. I soon dropped them like hot bricks, but too late to save my hands from considerable irritation for a while. Beautiful enough, but they could sting without a doubt. The greatest "fall" of larvae I saw was after a semi-typhoon, the centre of which passed the island about 100 miles away. The evening before the wind struck us I had been admiring my lovely garden, full of sun-flowers and roses, with a fine show of Indian corn standing about 6 feet high. That night I was awakened by the wind, and, guessing what was happening, secured my windows and doors and managed to get to sleep again. I always awake at dawn, and with the sunrise the rain ceased and the wind died down to a dead calm. Flat was the only word to describe the state of my garden. The paths were very muddy (a yellow, clay-like mud) and a quick walk around my responsibilities showed that all mat sheds on tennis court and the bathing beach were blown away. But I was not at all concerned about this damage. Labour was cheap, and what are a few mat sheds compared with a host of larvae? The trees were well stripped of their smaller branches, and I thought all the caterpillars in creation must be on the island. They were everywhere in dozens, many drowned in the clay-like mud, the less feeble still struggling out of the mud to the best of their abilities, whilst bigger chaps were going back to safety up the tree trunks. So I enjoyed myself for a good two hours in helping larvae out of the mud, got well plastered with the stuff myself, and really did want my swim (and breakfast) that morning.

From the above the reader will naturally learn that the island teemed with moths, most of which I cannot name. One was a nuisance to me. A small bush-like tree grew against the wall outside the cabin I used as a wardrobe. My coats, etc., were hung on a rail under a wooden shelf, covered by a rail curtain. The bush was infested with the larvae of A. sylvata (Clouded Magpie) and when they all disappeared I just forgot them. But they did rather a strange thing, although I admit they had practically stripped this bush of foliage, and may have wandered in serach of fresh pastures. The door of this cabin was by no means a good fit, and they had trooped into my wardrobe and pupated amongst my coats. They crawled up the sleeves and under the collars, etc. - in fact anywhere they could lodge themselves. I never found the reason for this strange affair, as there was earch in plenty a few feet from their food-plant. The only day-flier of interest was L. dispar (Gipsy). The males were everywhere around the club, and almost every tree trunk had its female.

As darkness fell, and if the night was favourable, I could rely on being very busy. My practice was to kill and set the majority the same night, and this job kept me at work until the early hours of the morning. Many specimens I would leave in my relaxing tins, because this is the best practice, but it should be realised that in one day I would set as many as one hundred specimens, from Atlas, Arrindi or Moon moths down to Pugs in size. My killing outfit consisted of six cyanide bottles, two large chloroform lethal chambers (large tin boxes with perforated false bottoms) and a hypodermic syringe with fine and coarse needles, the syringe being charges with formalin. My setting boards were of the flat cork type, as purchased from Messrs. Watkins & Doncaster, but as my need for boards became acute I was glad to get a large number of yellow pine-wood boards, with a cork strip in the groove to take the black entomological pins, using ordinary pins for setting to stand up to the yellow pine. My only trouble in setting was that after the first dozen or so specimens my finger tips would smart from the pin heads, and every day I nursed sore finger tips. The pine boards were made sloping slightly upwards from the entire groove to allow for, maybe, a slight drop of wing when insects were removed from the boards. All were 14" long. A chest of drawers (supplied to keep my underwear in) made a splendid drying-house, when stocked with camphor and napthaline.

About 9 o'clock I would go for a short stroll through the narrow paths and pines, armed with two electric torches and a chloroform box, the cotton wool in same being freshly sprinkled with the "dope". I had generally only one object in view, and that was Moon moths, as I found that my Club light rarely attracted them. The majority of this species were discovered by searching or listening, as a pair in a low bush or on the gravel paths made quite an appreciable rustling sound. They were generally damaged, as, out of half a dozen in one evening, every one had been battered, the tails generally being the damaged parts. On only one night did these beautiful moths pay the Club a visit in full force, and it seemed to "rain" Moon moths. For about ten minutes they were everywhere around. My bag was a good, and I did manage to select a round dozen in perfect condition. On one occasion I well remember returning from my stroll with empty box and going into the bar of the Club for a drink. A chum told me to"take my bug hunting hobby off my back", which is a Naval way of telling you not to let your job worry you. I had returned with two Moon moths on the back of my jacket, they having no doubt crawled on to me when I was crouched amongst the low bushes listening in trying to locate them.

The Club was usually plagued with moths, and many an evening have I heard a call for me to inspect the collection on the billiard table in case any were needed, before the boy not too gently swept them off when a game was being commenced. It was an amusing sight to me to see a fellow about to take his shot when some large moth alighted on the table in his line of fire. Some of the expressions used against the offending insect told that the Society has a long way yet to go in making the nation entomology minded! I have seen a chap playing for quite an appreciable time with a pair of Arrindi moths on his back - ladies in those parts have no need for ornamental brooches. About 10 o'clock was my time to start taking a lively interest in what settled on the white-washed walls and white table cloths in the space between the cabins. If the night was wet or a little damp I had other company. The toads found out my hunting ground, and there was sure to be a few of these ready to snap at any moth or beetle which came within their reach. I used to lightly pinch the smaller moths, such as Muslins and Kittens, to help with the feast, but those toads never seemed to be satisfied. Hedgehogs, too, would visit me, but they seldom stayed long.

The only British Hawk moths I encountered were ocellatus (Eyed Hawk Moth) and convolvuli (Convolvulus Hawk Moth), the latter being fairly common in September, while stellatarum (Hummingbird Hawk Moth) was fairly plentiful in the garden during the daylight. About a dozen other species of Hawk moths came to my lighted space, but being only seriously interested in British species, I have never named them - although I did bring them home with me, as some are very beautiful. A favourable night kept me very busy indeed. It was not a case of using the net but of knocking them off the walls into the cyanide bottles, never putting more than one into the bottle at the same time. When numbed by the cyanide I would kill them with chloroform. In my cabin about 10.30 p.m. I commenced setting, with occasional trips to the walls and table in case a fresh face or a prize had arrived. And so on until sometimes 2 a.m., when I grew too tired to set perfectly (I cannot face the sight of a badly set or damaged specimen all unset specimens going into the relaxing tins, as I prepared for my final smoke and bed.

There were yet a few small jobs to do before retiring. Undressing was easy, as usually I worked in just vest and shorts, with a pair of slippers. My arms and legs reeked of ammonia, likewise my neck and face. I never stopped to count the number of mosquito stings. Having undressed and washed down in about a quart of water - as this precious commodity was not too plentiful - my pyjamas were quickly on before a mosquito or two fancied a tender part. Then as my cabin door had been open for a few hours, I had to search my little cabin and eject all toads, sometimes a hedgehog (I ignored all moths, stink bugs and centipede-like insects we called "hairy Marys") and shut the door. Next job was to search for scorpions. I kept a special pair of scissors for this purpose, and usually found more than one. I used to gloat over the efforts of these filthy-looking creatures, as they curled that nasty tail over their backs and struck at my scissors as I snapped them slowly in halves. But one had me one night, and although a very painful experience I am glad it did get me, because I used to wonder what the sting from a scorpion was like. Now I know, and one is sufficient. I got caught this way. A wooden shelf cov[illegible] window-sill inside the cabin, and on this I kept a clean duster. Every night I would use this article to clean my little drop table after setting was finished. On this particular night, as I gripped the cloth, a sharp pain shot up my arm from finger to elbow. I did not think twice and bearing the pain, which was really very acute, I carefully shook the duster on to the desk, and there was my scorpion Not a very large one, though being about 2 inches long. My scissors soon put paid to his stinging performance, and collecting some sticks I boiled a kettle of pond water. While the water was boiling (the sting was on the tip of the middle finger) I cut the finger open with a razor-blade and soaked it in iodine. That operation made me laugh a lot! Then for the rest of the night I kept my finger in water as hot as I could bear it, and by early morning the swelling and shooting pains had almost gone, and the only trouble was the rather awkward cut I had inflicted upon myself. Whether I adopted right or wrong treatment I am not sure, but it was all very painful, although fortunately coming to nothing. After my nightly scorpion hunt there was nothing to do but to carefully unravel my mosquito net and hop under it into bed quickly before I let a few moths, etc., in with me for the night. Needless to state, I used to sleep very well, as I always went i[illegible]

But it was a fine life, and I had my hobby to thank in helping me to spend a period which could be very lonely at times, and likely to grow monotonous.

Time just flew by, and every day was full of interest and pleasure.

From all I have written one must gather that this little island of Liu Kung Tao is an entomologist's paradise, especially for those who seriously study and collect foreign species.

In conclusion I would state that China is a fine spot for our hobby, and whoever may be lucky enough to travel that way should go well prepared for a busy and interesting time, but beware of the humid climate which will relax and also spoil all specimens, if the simple but necessary precautions are not observed.

CHARLES W. BAKER.
Lieut. (E). R.N.

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BUTTERFLY MIGRATIONS IN THE TROPICS - British Museum Booklet, price ninepence post free; five coloured plates. Our advertisement of this excellent little companion to BRITISH IMMIGRANT BUTTERFLIES AND MOTHS was accidentally omitted from the last issue, with the result that we now have more copies of it than of the latter.
ENTOMOLOGISTS' BULLETIN VOL. 1 REPRINT. We still have several copies remaining. Price 2/-, post 1½d.
DATE LABELS - We can now obtain these in both six point type (as shown in the October Bulletin), or in 4½ point (diamond) type. The latter are 7/6 per thousand, the former 6/-.
ENTOMOLOGISTS' BULLETIN VOL. 2 - 3/- post free. In binder 5/6 post free. Binder separately 2/9. Extra single copies of Bulletin 4d each. Obtainable from J.E.KNIGHT, Toftrees, Woodside Avenue, London, N.12.

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QUERIES

Query No. 47 With reference to the paragraph on relaxing in J. 21, p. 95, I should like to raise a query. Have any of our members found that the use of phenol as a mould preventative in relaxing tins sometimes causes greenish patches to appear on the wings of members of the Pieridae?

[illegible] (120).

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REPLIES TO QUERIES

No. 2 Cannibalism does occur occasionally in broods of Sphinx ligustri. My own experience has shown me that the forward larvae, having moulted themselves, attack their more backward fellows whilst they are moulting.

Ernest L. Bean (115)

No. 3 Two-thirds is quite a reasonable proportion to expect to mature, but much depends upon the hardiness of the species reared and the care and attention of the breeder. The percentage of loss increases with the number reared. (Not always! I know several species which thrive best with neglect and bad management! B.A.C.)

Ernest L. Bean (115)

No. 4 A piece of butter muslin stretched over the door or ventilators of the cage, leaving a space of about $\frac{3}{8}$ of an inch between the muslin and the perforated zinc is a good preventative against ichneumons.

Ernest L. Bean (115)

No.19 A small flat tin, the lid perforated, is an excellent container for a wad of cotton wool soaked with sweetened water. The solution is made more attractive to the moths if a very small quantity of oil of aniseed, rum essence or fruit essence is added. It is best to make up a stock in a bottle so that the quantity of oil or essence will not be made too strong. To perforate tins it is best to puncture them from the inside and then file off the rough edges. An iodine brush is ideal for brushing out matted hair.

Ernest L. Bean (115)

No.42 In reply to Query No.42 concerning the respective merits of flat and oval setting, it may be of interest to quote the following authorities. The late J.W.Tutt in "Practical Hints to the Field Lepidopterist" (Part 1, 2nd edition, page 19) comments as follows:- "In spite of the advantages of this high setting known as the "continental" style, it is absolutely taboo among purely British Lepidopterists, and even an attempt to meet this half way by pinning, on the usual British pins, the insect well up the pin, and set quite flat, is quite out of court. Low, curved setting, then, is a peculiarly British institution, has survived endless attacks on its position, and remains more firmly fixed than at any other previous time, as the one and only method satisfactory to the great mass of the British Lepidopterists". (I doubt if this is true today - S.C.A.).

In the "Entomologist" , volume XX1X, September 1899, in an article, "Uniformity in Setting", the late H. J. Leech comments as follows:- "The continent or flat style of setting has the following advantages over that usually practised in England:- The pins are of uniform length for all thicknesses; the specimens ar well raised off the bottom of the drawer, so that there is less danger of their being attacked by mites etc., the wings are flat, and therefore in a better positi for examination and comparison than when sloped and curved to different extents according to the fancy of the collector or the maker of the setting boards; the fringes also are not liable to damage through contact with the bottom of the drawe which is so often the case with insects set in the English fashion. The advantag of flat setting have been recognized at the Natural History Museum for some years"

The late Rev. Joseph Green, however, held a contrary opinion, as the following extract from the "Insect Collector's Handbook" shows:- "Some years ago there was a correspondence carried on in the pages of the "Intelligencer" respecti the different methods of setting. On the continent insects are set perfectly flatVery long pins are employed, in many cases needles, which are thrust through the insects very nearly at their tops. The gentleman who initiated the controversy was a foreign entomologist of eminence, Dr. Staudinger. His object was to persuade English collectors to adopt the foreign method. Only three or four I believe gave it their adhesion. I am not surprised at the number being so small. I have seen many collections abroad and some at home, set in the foreign fashion, and I must say I cannot conceive a more hideous, unnatural or ungraceful plan. I never look at a continental specimen of an insect perched up at the top of a pin or needle about three inches long (itself a slight exaggeration!) and its wings perfectly flat, without being irresistably impressed with the idea that it has first been painted on a piece of stiff cardboard and then cut out and pinned. Everyone to his own taste nevertheless".

The great disadvantage of the so-called British method (oval setting board have always been peculiar to British collectors) is that the wings touch the bottom of the cabinet drawer, and that the insect has to be removed in order t inspect the data label. It has always seemed to me utterly wrong that any part of the specimen should touch the cabinet, as the slightest friction is liable to damage the insect, especially amongst the geometers which are extremely fragil. On the other hand, insects pinned at the top of a slender continental pin, whilst avoiding these defects, are somewhat difficult to handle, and many British-made cabinets have the drawers too shallow for these long pins. A compromise between the two styles seems to provide the ideal, the insect pinned well up the usual British pin and set quite flat, as advocated by Tutt and T. Bainbrigge Fletcher (above). I believe that this is the style now most generally used.

S. G. Abell.

No.46 There is little to worry about concerning the breeding of many exotic lepidoptera. For anyone rearing them for the first time it is well to keep them in cages under some sort of shelter except those from equatorial regions, which are best left alone unless one has a greenhouse large enough to rear them and grow suitable foodstuff. The larvae that can be reared are rather slow in feeding up when reared outside a greenhouse, some taking as long as three months to develop. Platysamia cecropia is an example. Cocoons that are exposed to a heavy shower in their own countries should not be thus exposed in England, but during the winter they should be kept in a dry cool room in the house. Certain species, such as Telea polyphemus, A selene or royli which pupate during August-September will emerge if taken indoors before October. Pupae in cocoons that have been damped too much will be late in emerging, sometimes remaining in that state for a second year. The large Attacine moths often remain in the pupa for a second year, so it is not necessary to cut a cocoon open unless it is very light in weight. Few English ichneumons bother these foreign larvae, but imported pupae are often found to have been attacked. I once found fourteen fly pupae in a Great Emperor (Saturnia pyri) pupa case.

Foodplants of Attacus cynthia:- Common lilac.
Automeris io:- WILLOW, corn-blades, oak, ash, plum and poplar.
Platysamia cecropia:- LILAC, APPLE, willow, box-elder and maple.
Telea polyphemus:- OAK, willow, hawthorn, apple, pear, maple and elm.
Actias selene:- WILLOW, oak.
Actias luna:- WILLOW, oak, walnot, liquidamber.
(Those in capitals I have found best).

Cocoons: Cold will not hurt the pupae provided they are dry. They cannot stand the English winter outdoors, owing to excessive damp. Do not keep them in a warm place, as they may emerge during the winter. I have always reared pupae out of doors until about the third week in October unless you want them to emerge the same year. If the pupae are brought into the warm before that time, and later transferred to a fairly cold place, they will still emerge at the normal time, but will be deformed. To get the moths to emerge earlier it is necessary to keep them in a temperature between 62° and 78° for the best part of the day for about six weeks, when they should then emerge. I have for two years been trying a method of forcing pupae, but the varying conditions needed by different species have handicapped me in formulating rules, and caused a loss of about 20% in deformities and dried-up pupae. Moisten cocoons once a fortnight, but do not make them too wet.

Emerging to mate: When the temperature passes 70° in June the cocoons can be put outside, as the heat of the sun is beneficial, the breeding box being best placed under tree or bush. As females often emerge before males, it is best to let one moth emerge, and then select a mate and place it in a constantly warm place. When one has large numbers, it is just as wise to leave them to emerge naturally.

Larvae: The larvae of io, polyphemus and selene may be sleeved out, but one must remember that they are great feeders and will get rid of an enormous quantity of food in a short time. Cecropia and cynthia, to an even greater extent, are delicate in this state, and should be reared in boxes. I use 28 lb. margarine boxes, leaving a light frame covered with netting for the door. The doors should not cover the whole of the front, as they drag when opened, so I make the front of the trays, which fit flush inside the box, come out level with the doors. When larvae reach their last instar it is well to take the jars of foodstuff and larvae out of the boxes and stand them on a table, or somewhere convenient for the purpose, to enable them to spin up on the leaves, as, if left in the boxes, they will spin up on the wood and often seal the top of the door too. If they must be kept in boxes, then line the boxes with stiff paper and stick a piece of cellophane across the top two or three inches of the door. Cellophane peals off cocoons easily. Io larvae have urticating (stinging) hairs of which one needs to be wary. Another point to watch with io is that when the eggs hatch, the young larvae follow each other in Indian file, or seldom more than four in a rank, so if food is not in the way of the leader they will starve, even if the company are marching over their food. So see that the leader starts to feed. To hold the sprays of foodplant I use a screw-top jar with holes in the top to suit the stems. Leaves should be immersed in water for an hour; not longer or they will go black; they are then wiped or stood in a jar to dry off, and then put into the jars in the boxes. Leaves thus treated will keep fresh as long as fourteen days except in the autumn. Food in the boxes will need replenishing every alternate day or daily if you have fifteen or more in a box and cannot get a large amount of food in.

The above, I think, covers all the queries. Young larvae can be reared in your "favourite way". The enamel on tins can be cleaned off with a piece of rag dipped in methylated spirit, and the tin will then look as though it was made for the purpose.

I will endeavour to answer more of the queries in the Bulletin during the forthcoming season when I have obtained a few more facts on the subject. My advice for the present is to rear as much as you can by sleeving, etc., until the fourth moult and then place them in a tea chest or other large box, feeding them with food cut fresh daily and put into the box without water.

Ernest L. Bean (115)

No.47 I have not noticed the colour change described above for the simple reason that I very rarely need to relax anything, setting my ammonia killed catches immediately they are removed from the bottle. Other disadvantages believed to be due to the presence of too large a quantity of phenol, however, lie in the restiffening of the specmien after relaxation if left in too long. Among colour changes noted are that green hairstreaks (Callophrys rubi) turn brown on the underside, this reverting to its former hue but rarely, or in patches on drying off. (See note towards end of T.D.Fearnehough's article J.13, p.5; Vol.1 Reprint, p.46).

B. A. C.

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WANTS AND EXCHANGES

It would be of help to the Editor if members gave both English and scientific names when inserting exchange notices, as many of our younger members are not familiar with the scientific designations of insects.

T.H.Fox (no.105) has for exchange pupae of Sphingidae; larvae of Lappet (G.quercifolia); Oak Eggar (L.quercus) and Scarlet Tiger (C.dominula); ova of Canary Shouldered Thorn (E.alniaria) and Pale Oak Eggar (T.crataegi).
WANTED: pupae of Pale Brindled Beauty (P.pedaria); larvae of Jersey Tiger (C.hera
Dark Tussock (D.fascelina), Cream Spot Tiger (A.villica) and others of special interest during the winter.

J.Walker (no.22) has for exchange:- Dianthoecia barrettii (Barrett's Marbled Coronet), Orrhodia rubiginea (Dotted Chestnut), [illegible] hispidus (Beautiful Gothic), Aporophyla nigra (Black Rustic), Colias croceus (Clouded Yellow) and many other set British Lepidoptera, also larvae of Callimorpha hera (Jersey Tiger).
WANTED: Notodonta trilophus (Three Humped), Acronycta strigosa (Marsh Dagger), Bryophila algae (Tree-lichen Beauty), Bryophila muralis impar (Cambridge Marbled Green), Acosmetia caliginosa (Reddish Buff), Noctua depuncta (Dotted Clay), N. subrosea (Rosy Marsh), Dianthoecia irregularis (Viper's Bugloss), Meliana flammea (Flame Wainscot) or [illegible] flammea (Flame Brocade), Cucullia scrophulariae (Water Betony Shark), Graptolitha furcifera (Conformist), Brachyonycha nubeculosa (Rannoch Sprawler). He also has large quantities of set and papered exotics, and will exchange for large exotic butterflies or foreign stamps.

D.T.Lees-Smith (No.110) would like to hear from any [illegible] who might care to receive butterflies from him next year when he is in Menano in N. Italy. He also wishes to receive specimens of Polyommatus astrarche var. salmacis (Castle Eden Argus) and var. artaxerxes (Scotch Brown Argus).

Duplicates - Perfect L. coridon var. syngrapha. WANTED: Rhopalocera vars.

S.G.Castle-Russell (No.119)

M. J. Mansfield (No.137) has numerous duplicates. Lists exchanged.

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MEMBERSHIP CHANGES

Newcomers:-

No.127 - J. Cheney, 5, Broughton Road, Banbury, Oxon. (Lepidoptera).
No.128 - H. C. Briers, 12, St. Alban's Road, Highgate Road, London, N.W.5. (Lepidoptera)
No.129 - O. Curd, Elsinore, Whiston Lane, Prescor near Liverpool. (Lepidoptera)
No.130 - E. Ramsden, 1, Woodland Road, Eden Avenue, Wakefield. (Lepidoptera)
No.131 - A. J. Slatter, 22, Cedar Road, Teddington, Middx. (Coleoptera, Lepidoptera).
No.132 - N. A. B. Collyer, 27, Guildford Way, High View, Wallington, Surrey. (Lepidoptera)
No.133M - K. H. Poole, 48, Clevedon Road, Weston-super-Mare, Somerset. (Lepidoptera)
No.134M - M. J. Mansfield, 5, Chigwell Road, Bournemouth, Hants. (Lepidoptera)
No.135 - Les Raven, 117, Binley Road, Coventry. (Lepidoptera)
No.136 - G. J. Sard, 35, Culverden Road, London, S.W.12. (Lepidoptera, especially Noctuidae)
No.137 - F. W. Byers, 59, Gurney Court Road, St. Albans, Herts. (Lepidoptera)
No.138 - C. R. Palmer, 519, London Road, Thornton Heath, Surrey. (Lepidoptera)
No.139 - D. Watson, Proctors, Southfleet, Kent. (Lepidoptera)
No.140 - O. M. White, 78, Eastdale Road, Nottingham. (Lepidoptera).

Name Removed:- 34, 43.

PRESENT TOTAL:- 126.

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CALENDAR - FEBRUARY - MARCH

February is the month of least activity in the insect world, we are told by the statisticians of Rothamsted Experimental Station. Therefore, while a few of us may venture forth when the air is not frosty to dig pupae or search for larvae by torchlight after dark, most of our time must still be spent in preparation for the more active months of the year.

Identification and incorporation of last year's catch will no doubt have already been completed, but there may still be a number of specimens waiting to be relaxed for setting or exchange. More important is the provision of suitable breeding cages and sleeves for breeding purposes. Much time is often wasted in the summer months which could have been easily avoided if due preparation had been made at this season. No standard type of cage can be recommended, as it will vary with the species one hopes to breed and the time and foodplants available. Even jam-jars may have their advantages, so we must leave their design to each individually. Some useful suggestions are given in the Vol.1 Reprint. Sleeving is more easy to standardise, three or four sizes of sleeve in fine and coarse netting being required - the quantity again depending on one's own individual requirements.

Spring is the time for planting out a garden with foodplants. Many bushes and shrubs may now be planted, but it is usually unwise to use them for feeding larvae during the first year. Now is the time to shift oak, birch, elm, maple, beech, ash, and even pine, but such plants as laurel, holly and holm oak (a good substitute for oak, in many cases,and evergreen for hibernating larvae) are best shifted when the weather is warmer. Never attempt any transference when frost is about. Poplars, willows and sallows grow quickly from cuttings, which it is not too late to take. Almond,plum and apple are especially useful to breeders of foreign lepidoptera and may now be planted, while it is also the correct time for attempting to transplant Colutea, Broom, Gorse and Laburnum with any measure of success. For attracting imaginal insects, Buddleia variabilis, Pieris (Andromeda) floribunda, Sedum spectabile, Aster amellus, Centranthus ruber (red valerian), Centaurea nigra (hardhead), Eupatorium (hemp agrimony), lavender, privet, lilac ans Escallonia are excellent, and all may now be planted. Seed of single Dahlias, Cosmos, Nicotiana affinis may now be sown in a frame or greenhouse, but not till late April or even May in the open in most parts of the country. For foodplants most small weeds will have to be dug up in the country, or grown from seed collected in the autumn. I have found lupins excellent for feeding most general feeders, while Virginia creeper is grown by many for the same purpose. Delphiniums, if not cut down in the autumn, will usually produce the Golden Plusia (P. moneta), and Phalaris arundinacia, the variegated form of which is usually grown in gardens, will often attract Apamea ophiogramma (Double-lobed Rustic). Many of these wild plants must be ruthlessly kept in check, or they will soon smother one another and become a pest in the garden. A good plan for dealing with the worst offenders is to bury half a barrel and allow them to grow in this alone. If the barrel is not in the best of condition, however, such things as Convolvulus will soon make their escape, after which it is very difficult indeed to eradicate them. Many plants, such as Verbascum, campions, bedstraws (Galium spp.) and fennel may be grown from seed, this also being the best time for shifting, hop, nettles, dock, Epilobium, bedstraws and honeysuckle. For the treatment of other plants which may be required from time to time members should consult books on gardening or - write to Mr. Middleton (or the Editor!).

B. A. C.

ABNORMAL APPEARANCE OF PIERIS RAPAE (SMALL WHITE)

In an office in Streatham, S.W., a specimen of this butterfly was seen fluttering on December 15th, 1937. South writes that in certain favourable years a partial third brood has occurred, but I presume the warmth of the office brought about this extraordinary emergence. It was a female with very distinct black spots and wing-tips similar to the Summer brood. The two hindwings were slightly crippled.

Another unusual appearance was that of a specimen of E.urticata (Small Magpie) flying in a house in Bermondsey a few years ago on the 23rd March.

H. R. LAST.

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THE COMMA BUTTERFLY

(See Journal No.21, p.100)

In each of the two years 1934 and '35 I was able to catch two specimens of Polygonia c-album (Comma) in my garddn at Wallington, near Croydon, Surrey. Each year this butterfly has appeared for two or three days at the end of September and the beginning of October. Strangely enough it came regularly at noon, even if the day was not over bright. When the sun went in it settled on the rough eath or on a plain brick wall with wings outspread and it seemed partial to the small sunflower (Helianthus). All those that I saw were large specimens in good condition, very active on the wall, but not at all afraid of being struck at. One tried to settle on my face, and when I attempted to catch it with my hands, perched on the back of my chair. The number seen the second year was about double that of the first. In the autumn of 1936, however, they failed to put in an appearance, and I have not seen any since, although I have looked for them all over the district.

One of the specimens that I took showed very remarkable protective instincts It was fluttering violently, and, as I dislike pinching, I placed the net on the floor to get it bottled. Suddenly it went dead. The wings were closed above its back, the legs pressed very tightly against its body and the head was thrown back so that the antennae were hidden between the two forewings, which it strained forward in order to accentuate the irregukarity of the outer margin. I shook it out of the net on to the floor and it still lay quite rigid, only the forewings strained a little further forward. It let me turn it over and over, and pick it up on a piece of paper without moving. When I balanced it upright, it gently put out a leg and pushed itself flat again. Once in the killing-bottle, however, the first whiff of cyanide set it struggling as vehemently as before.

N. A. B. COLLMER.

THE

ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF

THE AMATEUR ENTOMOLOGISTS' SOCIETY

VOL. 3 NO. 24. PRICE SIXPENCE MARCH 1938.

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The next Bulletin will be issued in April, but no further Bulletins will be sent after this issue (March) to those who have not paid their 1938 subscription or who have not let the Treasurer know that they wish to remain members.

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THE AMATEUR ENTOMOLOGISTS' SOCIETY.

The minimum annual subscription, including the year's Bulletins, but not Reprints, is 4/- post free. This covers only expenses concerned with the production of the Bulletin, and those who are able to do so are asked to give a little extra towards the cost of advertising, a very necessary item in our economy. Payment should be made to the Hon. Treasurer, B.A.Cooper, at 61, Okehampton Road, London, N.W.10. Postal Orders may be made payable at Kensall Rise, N.W.10, Branch Office.

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The Hon. Secretaries will be pleased to forward a specimen copy of the Society's Journal and a prospectus to any non-member likely to be interested, on receipt of name and address. They will also gladly send prospectuses to those members who may be able to make use of them.

Will correspondents please remember that a reply can only be given other than through the Bulletin if they enclose a stamp for return postage. If contributore desire the return of their mss after publication, would they please mention this when writing. and also enclose the required postage stamp. We are able to reproduce SIMPLE drawings and diagrams if authors send us a facsimile drawn in Indian ink the exact size they wish the reproduction (which must not exceed 7 ins. in width or 11 ins. in length) to appear.

The Exchange Column is free to all members, and the Editors hope that full use will be made of it. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus and live insects, leaving that of set, pinned and unpinned insects till they have had more experience. The Editors offer no guarantee for any goods offered in the Exchange Column, and they are in no way to be held responsible should the privilege allowed be abused. Unless members state to the contrary, exchange notices will be inserted in the Bulletin once only. For addresses, please refer to the membership list and subsequent membership changes list.

Anyone at present not recording migrant lepidoptera and dates each year of [illegible] in the phenological list, [illegible] would care to [illegible] should write to B.A.Cooper for free literature and information. Any further information on migration will be willingly given by Captain T. Dannreuther, Windycroft, Hastings, and on Phenological Recording by Major H.C.Gunton. Rothgar, Gerrards Cross, Bucks.

Books mentioned under the heading "Received" may be borrowed from B. A. Cooper, borrower paying postage both ways.

THE ENTOMOLOGISTS' BULLETIN

is published by the Society nine times per year. Although of interest to all amateur collectors, it especially sets out to assist the less advanced collector and student of entomology. Beginners are especially welcome. If not satisfied with the Bulletin write to the Editor about it.

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol. 3 No. 24 March 1938

It has been commented that exchange notes are not as numerous now as they were a short while ago when our former title of "exchange club" was fresh in everyone's mind. That, we think, is hardly the case. It is apparent that the proportion of new members inserting these notices is rather higher than that of earlier members. The reason for this appears to be, not that previous notices had brought forth no result, but that, conversely, having got in correspondence with others, a member could make exchanges without using the Bulletin. This, of course, is a welcome sign, but we are sure that many members have a surplus on occasions which they would be glad to exchange, but for some reason have not done so. All that is required is to send a postcard to the Editor containing the wording required - preferably not needing to be chopped from its context in the middle of a letter and completely re-worded.

Again, in setting out such a notice, species of approximately the same degree of abundance or rarity should be asked for as are offered in exchange. If one offers a species that is local but common where found, one may expect to receive replies from others with similar duplicates, but not so if one asks only for rarities. Beginners should not be deterred from offering ova, larvae or pupae of common species, but they must not expect to get more than common things in return - in fact, those offering or asking for common sorts seem to have had the best replies. It also seems to be too common a habit for members to wait to reply to the notices sent in by others. Again, as wide a variety of species as possible should be asked for in return, as it will otherwise be very unlikely that anyone requiring those offered will have on hand those asked in return.

These remarks may seem very obvious and unnecessary, but certain it is that some members need to take them to heart. A number of the notices sent in, and even a few of those published had very slender hopes of being replied to. If unsuitable, the Editor will usually suggest what the member in question should do instead.

There appears to be a demand, especially abroad, for papered insects (owing to ease of transport). Also, more attention, in our opinion, should be paid to the exchange of apparatus, foodplants, wing-prints (as outlined in the February 1937 Bulletin) photographs, and even of books. If the season proves successful, we must hope to find our Wants and Exchanges section never below a page in length for on this, to no small extent, depends the continued rise in our circulation.

B. A. COOPER
Hon. Treasurer and Editor

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A HOLIDAY IN SCOTLAND, June 11th-27th, 1937.

For a beginner a fortnight's holiday in the Highlands of Scotland was quite an exciting experience, as everything was new and one had little idea of what might turn up next. We arrived at Morar, just opposite Skye, about midday on the eleventh, and in the afternoon I went out with my net alongside the loch; by the side of the road where heather and bog-myrtle flourished, I caught a number of Acidalia fumata (Smoky Wave) and one or two Anarta myrtilli (Beautiful Yellow Underwing). Of butterflies, I saw a few belated Callophrys rubi (Green Hairstreak) flying over the sallows, and caught my first C. davus (Large Heath) butterfly.

The weather was cold, with a North wind, and the sky cleared towards night, exposing a moon rapidly approaching the full (on the 23rd). However, having determined to sugar the posts round the railway and fields adjoining, I made up a concoction of golden syrup honey, beer and rum, much to the amusement of the hotel [illegible] but in a very short time the inhabitants became most interested, and often followed me on my sugaring "round". Alomst the first post had a number of moths on, and the evening's catch totalled nearly sixty, including Acronycta rumicis (Knot Grass), Mamestra pisi (Broom Moth)

M. oleracea (Bright line Brown Eye), M. thalassina (Pale Shouldered Brocade), Eumichtis adusta (Dark Brocade), Rusina tenebrosa (Brown Rustic), Euplexia lucipara (Small Angle Shades), Apamea gemina (Dusky Brocade), and other common things. This was quite a good augury for the first night, especially as sugaring in England up to date had been no good at all. The next morning I went further afield during the day and found my first Diacrisia sanio (Clouded Buff). A few more C. davus and Xanthorrhoe tristata (Small Argent and Sable) occurred, which latter was also new to me. In the evening I went dusking and netted my first Hepialus fusconebulosa (Map-winged Swift). They were flying in fair numbers, and I brought home about half-a-dozen. The night was very similar to the previous one, there being a few more moths on the sugar, but chiefly of the same species.

For the next week the weather remained cold, with periods of sun during the day and bright moonlight by night. There were always between fifty and sixty moths on the sugar, while on some nights we had as many as eighty. I took one Hyppa rectilinea (Saxon) which pleased me greatly, one or two Acronycta menyanthidis (Light Knot Grass), C. ligustri (Coronet), two Millers (A. leporina) and one melanic Dark Arches (X. monoglypha) almost jet black. H. fusconebulosa used to fly in the evening just after dusk, but, curiously enough, although the nights were all consistently cold, the temperature rarely reaching 60°, the main flight almost always occurred on alternate nights. During the day I saw on the hills a number of Lasiocampa quercus callunae (Northern Eggar) flying wildyl, and picked up a few females of D. sanio. Butterflies were very scarce, except for C. davus, C. pamphilus and Argynnis selene. When out sugaring I picked up a few Perizoma blandiata (Pretty Pinion) sitting on the posts. They were apparently confined to a spot near the hotel, as I never saw any during the daytime in the meadows where P. albulata swarmed. There were a number of Spilosoma lubricipeda (Buff Ermine) sitting about, and I took a few very nice ones, dark suffused with yellow, not by any means extreme, but quite distinct from the Southern English forms.

During the second week some of the later June arrivals appeared, including Plusia festucae (Gold Spot) and C. potatoria (Drinker), of which I took two lovely deep yellow-ochre females. During the daytime over this period I took two Semiothisia notata (Peacock Moth), a number of Xanthorrhoe tristata (Small Argent and Sable), Hydrelia uncula (Silver Hook), Lomaspilis marginata (Clouded Border), Coremia designata (Flame Carpet), Ephyra porata (False Mocha), E. pendularia (Birch Mocha), a very dull form of Eulype hastata (Argent and Sable), Cybosia mesomella (Four-dotted Footman) and many others. Lycaena icarus (Common Blue) was barely out, although on the last two or three days I saw a number of males and took two females, one having a fine margin almost up to the Irish standard.

I had hoped to take E. caesiata (Grey Mountain Carpet and possibly a late specimen of Anarta melanopa (Broad-bordered White Underwing). Accordingly, the first really sunny day (we only had two really sunny and comparatively warm days) my boy and I went to Mallaig and from there by boat down Loch Nevis to Inverie, and climbed the only easily accessible mountain of over 2,000 feet. At the summit (2,500 feet) we had a glorious view of the Coolins; just as we were descending I caught a Crambus (Grass Moth) that I did not know, which turned out to be C. furcatellus - a beautiful rich-coloured specimen with the clear-cut white ribbon running right across the full lenght of its forewing, but, alas, it was the only one I saw. I did catch almost on the very summit a poor specimen of Coremia ferrugata (Red Twin-spot Carpet), but as the wind was so bitterly cold on top we decided to climb down to a more sheltered spot where there were a number of great boulders; here we came across what I thought at first must be E. caesiata, but which later turned out to be a curiously large form of Melanydris salicata (Striped Twin-spot Carpet). They were not easy to catch when once roused from their hiding places, for the wind would catch them, making it extremely tricky work trying to chase them. Except for these three species we found no other lepidoptera at this height. At any rate, I felt rewarded, as I had only taken one M. salicata before this, being a week previously, flying in the dusk at sea level.

My best evening at sugar was one of the only two warm nights when the temperature was just above 60°, producing 150 moths, but except for one Palmpsestis or¼ (Poplar Lutestring) nothing new had appeared. The chief at sugaring lay in the deep colouring of the varieties. X. rurea var. combusta (Cloud Bordered Brindle) was in great numbers. and I have seen some with the appearance of the deepest sepia-brown velvet. The deep sooty black of R. tenebrosa (Brown Rustic) makes the southern English form look very drab.

Morar is a lovely spot, surrounded by mountains on all sides, and with a glorious view of Skye, Rhum and Eigg. The pure white sand is a feature peculiar to Morar, and I feel that a prolonged visit by some entomologist with leisure who could work it consistently for a period of, say, three months, would amply repay him for the time spent there.

G.H.W.CRUTTWELL.

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TORQUAY LEPIDOPTERA, 1937.

The 1937 season has been a very poor one round Torquay for butterflies, while some of the moths have been scarcer than normal.

The fritillaries were about their average abundance, except for Melitaea artemis, the Greasy Fritillary, which has disappeared altogether from one locality where I used to take it years ago, and it seems to be becoming scarcer from other places in the district. Even the garden whites were very scarce in the spring, the autumn brood being well below normal. I can generally tell how scarce or plentiful the Large White Butterfly is by watching neighbours' cabbage patches, when, about the beginning of September in every garden where Autumn Giant Cauliflower has been planted, the leaves have usually been skeletonised, unless the owner has been over them and removed the ova or larvae - a rare procedure. This year very few had been eaten up. On the other hand, Mamestra brassicae, the Cabbage Moth, has been as busy as usual - this species is very partial to Savoy cabbage, but does very little damage to cauliflower or sprouts. Unlike most larvae they do not always eat their way along the edges of the leaves, but attack them from all quarters, so that the leaves look like sieves, and as they are night feeders most people blame the trouble on snails or slugs, the only remedy known to me is hand picking with a lanthorn late at night.

The Vanessids have been scarce; I have not seen more than half a dozen Red Admirals during the whole of the season, only two Painted Ladies, while even the Small Tortoiseshell has occurred in very small numbers as compared with last year. The only butterfly that seems to be getting more common round Torquay is the Comma, of which I counted ten in a wood near Newton Abbot on July 24th last, and have seen others near Torquay itself. Polyommatus icarus, the Common Blue, has likewise been scarce throughout the district.

This makes one wonder whether the late springs have any connection with this apparent scarcity. We have had very cold spells these past few years, as, for instance, the severe frosts of May 1935, and these, combined with the prolonged periods of wet and dry, undoubtedly must have some effect on all stages of hibernating insects. No doubt many insects possess just enough vitality to carry them through a fixed number of weeks or months or suspended or reduced activity, and if this period is unduly prolonged they perish, or else are unable to, lay their full quota of eggs. It will be remembered that many species of larvae were very scarce after the frosts above mentioned, while species which had been common before the cold nights appeared, were scarce in later broods.

J. WALKER.

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ANTS AT WEYBRIDGE

On June 6th, 1937, the following ants were recorded on Weybridge Heath, Surrey:-

Myrmica laevinodia Nyl.	very common over the whole heath, nesting in banks, under moss and in decaying tree stumps.
Myrmica ruginodis Nyl.	one strong colony was found under birch leaves. A female, larvae and workers were taken, the nest being only a few yards away from a large Formica rufa nest.
Myrmica sulcinodia Nyl.	a dealated female and a few workers were found in a tiny earth mound.
Leptothorax acervorum F.	a colony was dug out of a natural mount of sand, after much hunting about. Workers were first seen wandering about in two's, one following the other, and if they lost each other, the leader would wait for the other to catch it up. The nest was in a hollow twig. There were three wingless females, workers and pupae. Another colony was dug up fifty yards away.

Acanthomyops fuliginosus Latr. I have found this species commonly for many years on Weybridge Heath, but this year it was only after the greatest difficulty that I found a few workers wandering about near old oak trees covered with ivy. No nest was found.

Acanthomyops niger L. The common "garden" ant was plentiful, casting up fine sand over the main entrances to its nest. A fertile female was found in one of the nests.

Acanthomyops alienus Foerst. This small species was almost as plentiful as *niger*, running about rapidly in the hot sun. A dealated female was found.

Acanthomyops flavus F. The common "yellow" ant was abundant. In the first nest which was discovered a female was found, surrounded by workers in the usual manner. The colony was taken in toto and placed in an observation nest at home, where it was found that the workers refused to have anything to do with the queen, who spent the whole of her time wandering round the outside of the nest, and when she came near any *flavus* workers she bit at them savagely. The following day a dead worker was seen clinging to her leg. On the next day, she had three workers, two on her legs, and one holding on to the antenna. The female was then taken out of the nest and the female removed with difficulty. Under the lens it was found that the queen was really a female of *niger*. How she could have got into the *flavus* I cannot imagine.

Acanthomyops umbratus Nyl. This ant was discovered for the first time by myself near the Hand and Spear Hotel, on the other side of the Heath. An enormous nest close to a path was dug up. I dug for twenty minutes and reached a depth of three feet, when stones prevented me from digging deeper, yet there were still workers ozzing out of inaccessible passages below. With almost each trowel-full came hundreds of workers and larvae of all sizes, and some pupae. No queen could be discovered, and no other nest of the same species was seen anywhere near this spot.

Formica rufa L. The wood ant is always plentiful on the Heath, the birch, heath, pine and rich sandy soil being ideal for its requirements. Some of the nests were so active in the hot sunshine that it was almost dangerous to approach them too closely. One nest was opened, and winged males ran out in abundance. These were the first winged species I have been able to find this year. This is rather early.

Formica sanguinea Latr. Our only slave-making ant was found in five places in different parts of Weybridge Heath, in company with its slave, *F. fusca*. All of these nests were at the roots of heather, and consequently very difficult to dig up. Very few larvae were seen in any of them, but a wingless female was pulled out as she was attempting to make her escape out of the back of the nest (this species is wont to remove its queen at the first sign of disturbance).

Formica fusca L. Not only was this grey ant found plentifully with its master, *F. sanguinea*, but a few nests quite a long way from any other nests were found in banks by the sides of roughly made paths. One was also found in a decaying pine stump.

A. N. BRANGHAM.

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IMPORTED BEETLE.

On Friday, July 23rd, in the Charing Cross Road, London, I saw two ladies examining a large beetle which was crawling across the pavement. From a distance the creature looked like a large stag beetle, but on close examination it proved to be a foreign species of a type which I could not recollect having seen before. I pocketed the insect and took it home wrapped up in a handkerchief. The beetle fed on sugar and water and lived just two days. I later took it to the Natural History Museum, and Mr. Arrow identified it as one of the Rhinoceros Beetles from Jamaica, *Strategus titanus*, specimens of which are not infrequently brought into this country in consignments of bananas. The insect in question had probably strayed from Covent Garden Market.

S. C. WINCOTT.

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QUERIES

No. 48 What is the best solution for whitening storeboxes or drawers after papering them?
B. A. C

No. 49 Is there any harmful effect on the body through having dilute vapours of naphthalene, paradichlorobenzene, or beech creosote constantly present in a living room? A member has been worried over this even since he heard of "naphthalene poisoning" and desires either reassurance that he is not about to perish, or else he will have to give up collecting (and membership)! Have we any toxicologists to help him out?

B. A. C.

No. 50 What is the simplest method of keeping a collection free from the museum beetle, *Dermestes musearum*, and how may drawers or boxes be effectively fumigated if this pest has effected a lodgement? Will a single charge of carbon tetrachloride suffice, or will this treatment require to be repeated at intervals to destroy the offspring of eggs that have delayed in hatching? Larvae of this beetle have been found, apparently quite healthy, in boxes well supplied with naphthalene, so this fumigant is undoubtedly an insufficient preventative.

B. A. C.

No. 51 The Chamomile Shark (*Cucullia chamomillae*). I should be interested to hear if any reader has successfully bred this species from wild larvae. Last June I found a number of these caterpillars feeding on Stinking Mayweed (*Anthemis*) growing on rock-walls bordering a salt-water creek in South Cornwall. They fed voraciously in captivity on this food-plant, kept fresh in water, until nearly full-grown, when they ceased feeding and all died except two. These pupated, but one dried up and the other was parasitised. Do they require sea air? They cannot have been subjected to salt spray in the wild, as the creek was very sheltered with never a wave on it.

JOHN E. KNIGHT.

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REPLIES TO QUERIES.

No. 11 I see in Query No. 11 in the Reprint of Volume 1 of the "Bulletin" that you want a suitable covering for outdoor breeding cages. For some time now I have been using the strong curtain-net called fillet netting for this purpose. It has a mesh of about $\frac{3}{8}$" and is extremely strong. I made a cage of this stuff out of some old curtains and left it out in the rain and frost for two winters and a summer, but there is still not a tear in it - and this in spite of the next-door cat which used to climb up the sides after my Tortoiseshells and Red Admirals. It seems quite unnecessary to treat fillet with anything, and a small opening for watering flowers, etc., can be made by merely slitting the net and gathering up the mesh on a large safety-pin. The retail price is, I believe, about 5d. per yar

JOHN E. KNIGHT.

No. 42 Regarding the flat versus oval setting boards controversy, I should like to say that I prefer the oval type, because specimens set on these look more "comfortable" and natural. In my experience those set on flat boards have a hard and artificial appearance, as the Rev. Green says in his book, but perhaps this is merely a matter of personal taste. None of my boards curve sufficiently to cause the wings to touch the bottom of the cabinet drawer, unless the specimen is badly pinned. I agree with Mr. Abell that the difficulty of reading labels is against British methods, but this could be avoided if the label were on an extensio and projected in front of the head of the specimen.

JOHN E. KNIGHT.

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WANTS AND EXCHANGES

D. T. Lees-Smith (110) would like to hear from any boys who might like to receive butterflies from him during the year, when he is in Switzerland. He also wishes to receive specimens of *Polyommatus astrarche* var. *salmacis* (Castle Eden Argus) and var. *artaxerxes* (Scotch Brown Argus).

A report on the macrolepidoptera of the county is now being prepared for the "Wiltshire Archaeological and Natural History Magazine", and A. Horder (85) would be very glad if members who have collected thre would send him lists of thei captures and localities. as near as is prudent. He would also like some mention of abundance, if possible, as follows:- A (abundant) to denote hundreds or more seen in the locality at any date; C (common) when seen in dozens; FC (fairly common) more than ten at any date; S (scarce) a few seen pretty well every year; R (rare) when specimens are seen only at intervals of several years; L and VL (local and very local respectively). All notes, however brief, are welcome. It is also hoped that Mr. Horder will enable his report to be read far outside the county by sending a copy of his list to the "Entomologists' Bulletin" for publication therein.

M. J. Mansfield (134) who last month asked for lists of insects members would like to exchange with him has asked us to state that he has discovered that most of his British duplicates are not in the best of condition; he still, however, has a large number of insects from West China for those who are interested.

J. P. Honeywill (148) wishes to correspond with a collector in South America. He would be glad to hear of any that members may know of.

The Ilfracombe Field Club is just commencing the compilation of a list of the fauna and flora of the district, giving special attention to the less spectular and less eagerly sought after forms. G. K. Hebbert (81) asks that members who have any records from the district should send him these, and also he would be very glad to references to periodicals on work done in N. Devon in the past. Abundance abbreviations as above (A. Horder's note). Special attention is to be given to the Coleoptera, Hemiptera and Orthoptera.

A. J. Slatter (131) is goigg to the East on a collecting trip, and would be glad to hear from any specialists or otherwise to whom he may be of service (note change of address).

B. A. Cooper wishes to dispose of a quantity of exotic Lepidoptera, and some Orthoptera and Homoptera, preferably by exchange for live ova, larvae or pupae during the season. They must be got rid of quickly, to make room for other material. All are in set condition, many being antennaless, as from having been papered originally.

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MEMBERSHIP CHANGES

Newcomers

No. 141 T. A. DANCY, MOONHILL PLACE, CUCKFIELD, SUSSEX. (LEPIDOPTERA).
142 I. S. BEATTIE, 21, STIRLING ROAD EDINBURGH, 5. (LEPIDOPTERA).
143 E. PENTLAND HICK, HOLMWOOD, PARKHURST ROAD, BEXLEY, KENT. (LEPIDOPTERA).
144 MISS B. CAROL FRASER, WARREN MOUNT, FRESHFIELD, near LIVERPOOL. (LEP.)
145 R. D. MORTON, 9, PRIORY AVENUE, LONDON, N.8. (LEPIDOPTERA)
146 JOHN MOORE, 11, THE GASTONS, GLOUCESTER ROAD, TEWKESBURY, GLOS. (LEP.)
147 G. F. B. PRIOR, 94, LANCASTER ROAD, ST. ALBANS, HERTS. (LEPIDOPTERA)
148 J. HONEYWILL, BUCKINGHAM PALACE MANSIONS, LONDON, S.W.1. (LEPIDOPTERA AND COLEOPTERA).
149 MISS M. SAMMAN, THE CROFT, NORTH FERRIBY, E. YORKS.
150 DR. W. G. WATT, M.D., 43, FOREST GLEN ROADLONGMEADOW, MASS., U.S.A. (LEPIDOPTERA)
151 R. H. KERSEY, PEPPERING EYE, BATTLE,SUXXES.
152 D. NASH, PARK FARM, PARK LANE, TUTBURY, STAFFS. (COLEOPTERA)
153 M. S. K. LEES-SMITH, c/o SOCIETE DE BANQUE SUISSE, LAUSANNE, SUISSE.

Change of Address:

A. J. Duke (97) to 23, Ravenscraig Road, Greenpoint, Cape Town, South Africa.
A. J. Slatter (131) to c/o Capt. A. E. Scott-Skouso, Changloon, near Kedah, V.A., Straits Settlements.
D. T. Lees Smith (110) to c/o Societe de Banque Suisse, Lausanne, Suisse.

Resigned: 49, 56.

PRESENT TOTAL: 137.

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OBSERVATIONS

On September 22nd, I took a male comma butterfly (Polygonia c-album) in my garden on Michaelmas Daisies, the first I have seen in the district.

B. A. C.

The Dingy Footman (Lithosia griseola) has a pale yellow variety (var. flava) peculiar to Britain, often known as the Pale Footman. It is noted by South as occurring with the ordinary form, chiefly in the Norfolk Fens and in the New Forest, although it is also to be found, though less frequently, in Surrey (Weybridge district), Berkshire (Reading district) and still more rarely elsewhere.

During July of this year (1937), griseola was common in the Weymouth, Dorset district. Of 36 specimens which came to light, 9 were var. flava. This would give a proportion of one in four, i.e. the grey variety is three times as common as the yellow. It would be interesting to compare these figures with those from other districts, if members have taken any notes of these.

B. A. C.

A. Kennedy sends us the following quotation out of a letter from his brother who lives in Perthshire and who has only been collecting two seasons. He adds that there seems something of the Loch Ness touch about it!

"I saw a copper some time ago, and wished I had the net; it was as big as a Small Pearl-bordered Fritillary, as I was quite close to it. I was amazed at its size, and have never seen one like it before". Was it an escape, a variety of something else, or what?

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COMMENTS.

G. J. Ford (136) asks whether anyone can explain how it is that the White Admiral (Limenitis camilla = sibylla) is more often than not taken in a tattered condition. This does not seem in any way to hinder the high and graceful flight of the species, and in spite of its taste for bramble-blossom he has never seen one of these insects come to grief upon their prickles. Has any member observations to show how the injuries are caused? He also asks why it is that he has rarely been able to find the imaginal Dytiscus marginalis, the Great Water Beetle, which is often described as "common every pool" in natural history books.

P. Kingsfield Venner (No. 95) notes that the Comma has settled in his district (Gosfield, Essex). He saw a single specimen in 1935, and seven or eight in 1936, it being very abundant last autumn (up to Oct. 14th). He comments on the almost complete absence of Vanessa io (Peacock) and Chrysophanus phloeas (Small Copper) of late years, while last August and September were conspicuous for their great scarcity of "whites". The Holly Blue (Celastrina argiolus) and the Brimstone (Gonepteryx rhamni) have been rare recently, while of the Sphingidae he has only met with the Humming-bird Hawk (Macroglossum stellatarum), the Poplar (A.populi), the Eyed (S.ocellatus) and the Lime (D.tiliae), the latter being the only common species of the family in the district. He has never met the privet hawk (S.ligustri in any stage, although carefully looked for on many occasions (other members also commenting on the scarcity of this species, remarking that textbooks usually call it a "common" species). The White Letter Hairstreak (Thecla w-album) and the White Admiral (Limenitis camilla) he also notes as occurring in the district.

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CALENDAR

Among Lepidoptera on the wing in March and early April are the following:- O.carmelita (Scarce Prominent) in birchwoods of S.E.England and Scotland; P.flavicorni (Yellow Horned) in birchwoods, [illegible] at night; B.ridens ([illegible]) oakwoods in England and Wales; [illegible] (Small Eggar), [illegible] ([illegible]); E.versicolor (Kentish Glory), males fly in the sun in birchwoods, mainly in Scotland, and assemble freely to tethered females; S.revayana (Large Marbled Tortrix) [illegible] and sallow near oakwoods; D.mendica (Muslin Tiger), males come to light, females fly by day when ovipositing. In 1933 I took 2 specimens of P.fuliginosa (Ruby Tiger) on the Watford Bye-Pass Road, Herts., but no doubt the species is [illegible]. A.auricoma (Scarce Dagger) in S.England; A.ypsilon (Dark [illegible]); [illegible]laris (Silver Cloud); D.templi (Brindled Ochre), females [illegible]

Sprawler), Perthshire birchwoods; P.piniperda (Pine Beauty) at sallow near pinewoods; P.leucographa (White Marked); P.rubricosa (Red Chestnut), also at sallow, with the following:- T.gothica (Hebrew Character); T.miniosa (Blossom Underwing); T.pulverulenta (Small Quaker); T.stabilis (Common Quaker); T.populeti (Lead-Coloured Drab); T.munda (Twin-Spotted Quaker); T.opima (Northern Drab); T.incerta (Clouded Drab); T.gracilis (Powdered Quaker); H.croceago (Orange Upper-wing); C.vaccinii (Chestnut); C.ligula (Dark Chestnut); D.rubiginea (Dotted Chestnut); S.satellitia (Satellite); X.semibrunnea (Tawny Pinion); X.socia (Pale Pinion); X.furcifera (Conformist); X.ornithopus (Grey-Shouldered Knot); C.exoleta (Sword Grass) and C.vetusta (Red Sword Grass). X.areola (Early Grey) comes to sallow but never settles for long. S.libatrix (Herald) at sallow; B.parthenias (Orange Underwing) and B.notha (Light Orange Underwing) fly in the sun over birch and aspen. A.virgularia (Small Dusty Wave); T.polyommata (Barred Tooth-striped) on privet hedges; T.carpinata (Early Tooth-Striped); T.dubitata (Tissue); C.siterata (Red-green Carpet); C.miata (Autumn-green Carpet); L.suffumata (Water Carpet), weedy lanes, comes to light; L.otregiata (Devonshire Carpet), Devon and Cornwall; M.multistrigaria (Mottled Grey); A.badiata (Shoulder Stripe); A.nigrofasciaria (Streamer), rose hedges; E.abbreviata (Brindled Pug), oak woods; C.pumilata (Double-striped Pug); S.bilunaria (Early Thorn); S.tetralunaria (Purple Thorn); O.luteolata (Brimstone); H.rupricapraria (Early Moth); H.leucophaearia (Spring Usher); H.marginaria (Dotted Border); A.aescularia (March Moth); P.pedaria (Pale Brindled Beauty); N.hispidaria (Small Brindled Beauty); N.lapponaria (Rannoch Brindled Beauty); N.zonaria (Belted Beauty); L.hirtaria (Brindled Beauty); P.strataria (Oak Beauty); T.bistortata (Engrailed); P.hippocastanaria (Horse Chestnut).

Among butterflies are to be found the three common whites (pieris brassicae, rapae and napi), Brimstone (Gonepteryx rhamni), Comma (Polygonia c-album), Large and Small Tortoiseshell (Nymphalis polychloros and Aglais urticae), Peacock (N.io) and Speckled Wood (Pararge aegeria).

We are sorry to announce that Mr. G. B. Walsh has been ill for some while past, and we have therefore been unable to continue the series on coleoptera collecting. We wish him a speedy recovery. Meanwhile, if any other members are able to fill this gap, or supply articles on other orders, we shall be very glad to publish them. A.F.O'Farrell has promised to send us notes on the dragonflies, while one or two others have made similar offers "when they have time" - soon, we hope!

oOo oOo oOo oOo BOoA. C.

LIVING COCOONS OF Actias selene, T.polyphemus, P.cecropia A.cynthia, Attacus atlas & Edwardsi and others; also a few pupae of Sphinx pinastri from E.Dorset larvae. Particulars from A.Ford, 42, Irving Road, Bournemouth.

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A HYMENOPTEROUS NOTE BY A LEPIDOPTERIST.

On the 6th July 1931 I saw a small wasp fly away from what appeared to be a small sausage of mud wedged in an angle of a large stone. I examined it and found that it was damp at one end, and it seemed to me that the wasp had just finished making this little mud-pack.

I opened it up, and found that it consisted of two cells end to end, each containing one ovum and 21 and 2o lepidopterous larvae respectively; the latter were about $\frac{1}{2}$"-$\frac{1}{4}$" long, and although not dead were immobile.

The Wasp ova hatched on the 9th July and started to eat the semi-conscious larvae; these, by the way, were of two or three different species, but all were green in colour.

On the 12th July the Wasp larvae were a shining green colour, shapeless and with a small light brown head. By the 14th they had changed to a creamy-white and were about $\frac{1}{2}$" long; they looked something like bluebottle grubs.

By the 19th one larvae had eaten all its food supply, except two hard and brittle caterpillars which had obviously been parasitised before our Wasp had captured them. The second Wasp larva was even more unfortunate, having six of these uneatable larvae. I now supplemented their food with two sawOfly larvae, killed by pinching behind the head. These were eaten.

On the 28th and 31st they pupated, spinning a slight cocoon and turning bright yellow.

A swarm of small ichneumons emegged from the parasitised larvae on the 16th August.

Nothing further happed until the 6th June the following year, when the pupae shed their skins, and a lifeless-looking wasp appeared. It was butter-yellow in colour with brown eyes, the abdomen was lighter yellow and the wings, legs and antennae were separate from the body. They gradually darkened to black as if the pigments of the imago were forming up under the transparent pupal skin.

The imagines emerged on the 25th June 1932. They are the Wall Mason Wasp (Odynerus parietum).

JOHN E. KNIGHT.

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LATE LARVAE OF THE LARGE WHITE.

The unusual appearance of larvae of *Pieris brassicae* in winter has been recorded before, and mention of it is made in Frohawk's book "British Butterflies", but I think the occurrence is sufficiently rare to warrant further publicity.

On 30th December as I was coming away from a house in Brighton, I noticed in the garden several larvae feeding on cabbages. Although it was a cold day, the larvae were lying fully exposed on the upper surface of the leaves. they appeared to be about $\frac{1}{2}$ to 2/3rds. grown, and seemed very sluggish, readily falling off when touched. I took one larva, and although it spend the greater part of the day on a cabbage leaf on the back seat of my car, it showed no tendency to wander. It was then trahsferred to a breeding cage, and is now practically full fed. On the 8th January I again visited the same house, and larvae were still to be seen.

I imagine the ova were deposited in October, which month was exceptionally fine, and that subsequent metamorphosis has been retarded by the cold, but I shall be very interested to hear other members' views on this curious phenomenon.

JOHN V. BAKER.

We should like to hear whether the larva taken daly pupated, and also later the date of emergence of the imago, as compared with one that pupated at the normal time, and kept under the same conditions.

B. A. C.

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THE
ENTOMOLOGISTS' BULLETIN

PRESENTED
15 JUL 1938

THE JOURNAL OF
THE AMATEUR ENTOMOLOGISTS' SOCIETY

VOL. 3 NO. 25 PRICE SIXPENCE APRIL 1938.

BRITISH MUSEUM
DEPARTMENT OF ENTOMOLOGY

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The next Bulletin will be issued
in Mid-May.

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THE AMATEUR ENTOMOLOGISTS' SOCIETY.

The minimum annual subscription, including the year's Bulletins, but not Reprints, is 4/- post free. This covers only expenses concerned with the production of the Bulletin, and those who are able to do so are asked to give a little extra towards the cost of advertising, a very necessary item in our economy. Payment should be made to the Hon. Treasurer, B.A.Cooper, at 61, Okehampton Road, London, N.W.10. Postal Orders may be made payable at Kensall Rise, N.W.10, Branch Office.

Authors desiring "extras" (reprints of their article alone) may obtain them by ordering at the time of sending in the contribution at the following rates:- First twenty sixpence, each succeeding twenty threepence per double side of printing. Typing appears as in the Bulletin, other matter on the same page being omitted.

The Hon. Secretaries will be pleased to forward a specimen copy of the Society's Journal and a prospectus to any non-member likely to be interested, on receipt of name and address. They will also gladly send prospectuses to those members who may be able to make use of them.

Will correspondents please remember that a reply can only be given other than through the Bulletin if they enclose a stamp for return postage. If contributore desire the return of their mss after publication, would they please mention this when writing, and also enclose the required postage stamp. We are able to reproduce SIMPLE drawings and diagrams if authors send us a facsimile drawn in Indian ink the exact size they wish the reproduction (which must not exceed 7 ins. in width or 11 ins. in length) to appear.

The Exchange Column is free to all members, and the Editors hope that full use will be made of it. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus and live insects, leaving that of set, pinned and unpinned insects till they have had more experience. The Editors offer no guarantee for any goods offered in the Exchange Column, and they are in no way to be held responsible should the privilege allowed be abused. Unless members state to the contrary, exchange notices will be inserted in the Bulletin once only. For addresses, please refer to the membership list and subsequent membership changes list.

Anyone at present not recording migrant lepidoptera and dates each year of first noting the species mentioned on the phenological list, who would care to do so, should write to B.A.Cooper for free literature and information. Any further information on migration will be willingly given by Captain T. Dannreuther, Windycroft, Hastings, and on Phenological Recording by Major H.C.Gunton, Rathgar, Gerrards Cross, Bucks.

Books mentioned under the heading "Received" may be borrowed from B. A. Cooper, borrower paying postage both ways.

THE ENTOMOLOGISTS' BULLETIN

is published by the Society nine times per year. Although of interest to all amateur collectors, it especially sets out to assist the less advanced collector and student of entomology. Beginners are especially welcome. If not satisfied with the Bulletin, write to the Editor about it.

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ADVERTISERS' ANNOUNCEMENTS

This page is reserved for members' advertisements (not exchanges), dealers' notices, etc., at cheap rates. For advertising rates, apply to the ADVERTISING SECRETRAY, Mr. A.N. BRANGHAM, 1c, HOWITT ROAD, BELSIZE PARK, LONDON, N.W.3. (Telephone number: PRImrose 6073). Advertising copy should be sent to Mr Brangham by the 12th. of the month before the next issue of the Bulletin is published.

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THE ENTOMOLOGISTS' BULLETIN.

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol. 3 No. 25 April 1938

Nearly all members have now paid their subscriptions, and several have taken the trouble to return their Questionnaire forms with suggestions, and notes on the Comma butterfly and Peppered moth - none apart from Mr. Main and the Editor seems to have noticed the spined pupae of Pieris brassicae!

As it is the suggestions which interest us most, I will deal with these here. First I would thank members for their most appreciative remarks. which bulked so largely in the letters and comments sent with the forms. The most popular item in the Bulletin seems to be that of Queries and Replies, for which the voting gave an almost unanimous (1), three considering the section only moderately good, and only one, a coleopterist, marking it (3). Remedy, evidently more coleopterous queries (and, we hope, replies). (For those who do not remember the system of marking, (1) denoted "I like it very much", (2), moderately good, (3) not up to much, and (4) "I dislike it very much".).

The next item in order of popularity was "Calendar", which produced five (2)s - the only (3) being from a rather critically minded member of the committe Then, strange to say, came a fairly solid approval of the Editorial, although T. Norman commented that it was "like all editorials". No doubt others had this in mind too. (Our committee member went no lower than (4) this time).

Then a slight drop, after which people are not so sure whether they like the "Hints for Beginners" and the rather excessive proportion of articles intended for Lepidopterists. To the former there may have been some doubt as to whether it was the series as a whole that was referred to, or merely the articles which have so far appeared. One consolation, small though it be, is that none gave it a (4) and there was only one (3) (from a younger member). From this, we take it that the series as a whole is not disapproved of, but a better selection of articles is required - perhaps this may prevail upon our more experienced members to send contributions to this section. R.C.Dyson emphasises this point, saying that more articles suitable for the absolute beginner are needed, as the encourgaement of these will tend to enlarge the membership, of course necessary to bolster up the funds. This is very true, since it is our job to encourage every stage in the metamorphosis of the collector, from the hatching of the first interest up to the conclusion of a varied entomological career. Nevertheless, it does appear that there is little to be done to help the young starter other than to recommend him a suitable textbook and, if possible, a companion in the chase. As to the question of the great excess of lepidopterous articles, most members seem to have hit the nail on the head by remarking that 95% of us are Lepidopterists This however, is small consolation to our few ant and beetle-collectors, whose membership we have no desire to lose. One diehard goes so far as to suggest that the Bulletin should cater solely for Lepidopterists, since there is no purely lepidopteral magazine now in existence. My own opinion (voiced also by others) is that more space should be given to non-lepidopterists, if only to encourage we others to widen our interests somewhat. Others ask for articles on coleoptera hymenoptera and diptera, the number of requests being in that order, and one asks that we should have an article on nomenclature.

The series on the month's beetle-collecting appears to be less popular generally, but only because of our lack of beetle-hunters. Even so twelve mark their papers (1), and only one diehard gives it a (4), so we do not want the feature dropped. Other non-lepidopterous articles are liked even less - (1)s had dropped to eight, while (4)s had increased to five. Many refrained from expressing an opinion on these two last questions, or excused their low marking with the proviso that they might like the articles if they understood them!

Of the numerous comments, perhaps the most persistent is the one declaring that the pages are not always readable, while our duplicator hints that the stencils are unprintable in more than one sense! We will do our best during the coming months to see that only readable copies are sent out.

Captain Dannreuther suggests that the Editorial is better kept to a fly-sheet as not necessary for binding in the Journal. This will have to be done when the Bulletin is printed, but for the present I hope it is not quite as bad as that. Referring to the heading "Calendar", he points out that the Nautical Almanac Office issue tables of sun and moon rising and setting at 1/-. As this latter table, printed in last April's Journal, and intended for moth collectors, does not seem to have been appreciated, it is being omitted this year. Suffice it to say that when the moon is near its full, it reaches its zenith not far off midnight, G.M.T. W.N.Roberts asks that the Bulletins should always be backed by a yellow sheet; this we want ourselves but mistakes have been caused, either by our forgetfulness or through running out of the tinted sheets on early closing day. Mr. Roberts also suggests that the outside back cover should not be printed on, or reserved for announcements. G.T [illegible] wants the pages stapled in the top left hand corner only, as R.L.Tesch used to do, to facilitate ease of turning over and reading.

W.J.D.Eberlie asks for a "Notes and News" page containing short paragraphs of current interest. This might be feasible if members would regularly send us cuttings from newspapers or copied-out paragraphs from magazines or books, in every case giving the author's name, and title, number and page of the publication from which it was taken, so that we may quote the reference and acknowledge the source. R.G.Morgan, no doubt referring/the December issue considers that articles on collecting abroad do not merit so much space in our pages - or is it not a case of their needing to be better spaced and more regular? Our non-British members have contributed very little so far, and I personally would like to see more matter from them. D.O.Dykes asks for articles on the lepidoptera caught in different districts each year, while G.H.W.Cruttwell re-echoes this, even if authors are only able to write about their summer hobiday observations. (But beware! Mere lists may prove as dry as dust to thosd who live in another part of the country).

Captain Dannreuther recommends that the Society should cater for the amateur observer of nature and not for the mere collector of specimens. Perhaps this may be a very high ideal to aim for, but if we were to adopt it I am sure our membership would drop with a bang, and the ideal would have no magazine to support it. In addition, there are a very large number of magazines already in existence in all parts of the country with this object, and it would be folly to found yet another. On the other hand, there is a definite need of a periodical catering for the collecting public, which we are endeavouring to fulfill, at the same, of course, not forgetting that those who have the deeper scientific outlook are likely to derive more and varied enjoyment from their hobby than those whoes only object is to build up a collection.

P.Walderbwould stress the importance to the Society of the exchange facilities offered by the Bulletin. A little boosting from time to time may be advantageous, but the section ought to look after itself.

We had hoped to hold a meeting of the Society in London this April, but, owing principally to the small amount of time on the hands of the Committee, it was abandoned until such a time as they are more free. The meeting was to have taken the form of an exhibition of collecting apparatus and methods, possibly with two or three short lectures on the various problems one is likely to meet in dealing with different orders, or in photography, microscopy and other branches of entomology. There would be no charge for admission, the hiring of a hall being paid for out of the Advertising fund, while the meeting would be well advertised outside the Society so that we could expect a full meeting, and perhaps succeed in obtaining a number of new members through it. G.V.Banner suggests that one or two such meetings should be held in London during the year, at which members might meet and arrange expenditure together; interesting captures could also be exhibited and opinions exchanged. An entrance fee, such as 1/-, might be charged to defray the cost of a room, the amount, of course, being fixed by the number of members likely to be present. W.N.Roberts suggests that we should hold field meetings during the summer, and also at least one general meeting per year in London or other centre where a number of members could meet. This leads on to another point which strikes me very forcibly when improvements are suggested for the Society. It is that the Editor is expected to carry out all the improvements, to write articles on numerous subjects with which he is not acquainted, to run advertising campaigns, and to arrange meetings and give lectures at them. All these are very worthy pursuits to fill his spare time, but both he and the other members of the Committee are very busy people, and have other things to do besides running the A.E.S. By this we mean that we would like to hear from any members, preferably living in the London area, who would be willing to assist in the running of the Society. The Editor has, much to his regret, to announce his resignation from at least two of the posts at present held for a period of not less than two years, and owing to the little free time he now had would be glad to pass on the third if anyone can be found who would undertake this. It is suggested that it would avoid difficulty in making Committee changes in future if the three posts were kept permanently divided, thus giving only a small amount of work to each helper. We hope that some members will be able to reply to this S O S soon.

The last suggestion that must be mentioned is that of J.F.Knight, who says that, should we have to raise the subscription further for any reason, we should only do so for those over the age of 21, so as not to deter the younger members, for whom even our present subscription may appear a lot. We may mention here that one member, whom we have every reason to believe is unable to pay more, has been allowed a reduced subscription - this following our previous announcement that inability to pay should not deter anyone truly interested from remaining a member of our "fraternity".

We are hoping to form an "Advisory Panel" of members or experts to whom anyone requiring advice on entomological matters may write (paying postage both ways). Four names have been received for the Panel so far, and we should like to add to the list in time for the next Journal if others will allow their names to go on the list.

PALAEARCTIC LEPIDOPTERA -

The Booth Museum, Dyke Road, Brighton 5, Sussex.

COLEOPTERA & HEMIPTERA

G.B.Walsh, Linthorpe, Stepney Drive, Scarborough, Yorks.
Mr. Walsh unfortunately cannot undertake the identification of specimens, but will give help in any other direction.

HYMENOPTERA - ANTS

A.N.Brangham, 1c, Howitt Road, London, N.W.3.

FOODPLANTS.

R.C.Dyson, 103, Stanford Avenue, Brighton, 6, Sussex, will give what help and advice he can to any member about the selection, propogation and cultivation of foodplants for larvae, and attrahents for imagines.

To this list I presume we may add Captain Dannreuther and Major Gunton on Migration and Phenological Recording respectively.

B. A. COOPER.
Hon. Editor.

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ON PUPA-DIGGING.

I have been reading Parson Green on pupa-digging and I am worried; because the only conclusion I can draw from his remarks on the subject is that either I am a mug or Parson Greene, with all respect to his cloth, is a thundering liar.

I am, as it happens, rather fond of pupa-digging. I regard it as a perfectly futile occupation (but so is foxhunting) and I enjoy it nevertheless. It has an element of blind chance about it which appeals to me; you insert your trowel into the lucky dip which lies on the north side of the roots of every tree and expectantly examine the soil for whatever the good God sends you. (The good God generally sends me stabilis (Common) and pulverulenta (Small Quaker)!). It's a game of chance; its like casting your fly into the very farthest corner of a deep dark pool with a 'please God send me Leviathan'.

What worries me is the extraordinary difference between my results and those of the Reverend Mr. Greene. I dug, this winter, on about a dozen different afternoons. (And by "dug" I mean that I not only delved like Adam, but that I also ripped so much loose bark off trees that landlords spoke of a plague of rabbits). Those twelve afternoons yielded about seventy pupae. Of these, forty are common Taeniocampids - stabilis, pulverulenta, gothica (Hebrew Character), munda (Twin-spotted Quaker); a dozen are A. populi (Poplar Hawk);

half a dozen C.ligustri - the Coronet Dagger - (hard black cocoons under moss on ash-trees); two or three are A.strataria (Oak Beauty). The ten which I cannot identify will probably turn out to be equally common, or will die, in which case I shall confidently believe them to be rarities.

All this seems to me to be rather a poor reward for twelve afternoon's hard labour - all the more so since the labours of Parson Greene were so differently, so much more amply repaid. To him the gods gave lavishly indeed. Listen:-

"At one tree, in a corner about the size of a good large plate, I took the following: 3 trepida (Great Prominent); 17 dodonea (Marbled Brown); prodromaria (= strataria); 7 hirtaria (Brindled Beauty); and two or three dozen cruda (= pulverulenta), gothica, plecta (Flame Shoulder) etc." (About 60 pupae in the space of about 48 square inches; unless Mr. Greene's plates were exceptionally large ones).

And again:

"This autum I have succeeded in taking no less than 17 trepida".

"During this and the preceding autumns I have taken upwards of 300 dodonea.

"C.ocularis (Figure of Eighty) I took last autumn 4, up to the present time I have taken 9 more".

"C.ridens (Frosted Green). Of this also rare and beautiful insect I took 26 last autumn".

"I once had a thousand pupae of instabilis (Clouded Drab). (What on earth did he do with them?).

Now I don't begrudge Mr. Green his luck. He was an upright man, and his book had for me in boyhood an almost biblical quality. I wish him long repose in some entomological heaven where chaonia flutters about his halo. But so am I an upright man, and I feel I am entitled to at least a small share of such luck - at least one chaonia, at least one ridens of which Mr. Greene took 26!

I do all that I am instructed to do. I have the run of many acres of splendid park land. I search under the bark. I search under the moss. I dig like a mole. I 'shake the sod' - as Mr. Greene expressively advises. And out tumbles one stabilis.

An ancient entomologist observed that it was to be added to the pleasure of pupa-digging, that even if no pupae were found, there were nevertheless always beetles.

This remains true today. Unfortunately I dislike all beetles, and most of all I dislike that horrible beetle called violacea which I turn up every time I put my trowel in the soil.

Postscript: (Query No.55) What is the best way of keeping dug pupae during the winter? It is necessary to label them (unless you have a box for each locality, which in my case would lead to dozens of boxes each containing about 3 pupae); and my own method is to lay them in grooves cut in slabs of soft Somerset peat, with the label pinned at the bottom of each groove. This is probably unnecessarily elaborate; and I should be glad to hear if any members have tried keeping their pupae either on corrugated paper or on pure (untreated) wool. Both these substances are hygroscopic, and if it is desired to keep the pupae damp an occasional teaspoonful of water poured on the edge of the paper or wool should do the trick. I know one man who always keeps his pupae (right up to the time of emergence) laid on cotton-wool in airtight tin boxes; he puts a small piece of damp wool in the box with them, and this keeps the atmosphere sufficiently moist. I should be afraid of mould, but his method seems quite successful.

JOHN MOORE.

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ANTS IN SPRING.

With the coming of the first warm spring days which we have already experienced, the collector of ants should be prepared for his first expeditions.

On March 2nd I made my first trip of the year, to Weybridge, and found that numerous species had already appeared above the surface of the earth. Formica rufa, for example, was crowding in its thousands onthe tops of its typical mounds, while, on opening up the nests, I found that the brood was already being moved to more summery quarters. Many larvae were there, as well as the eggs.

In a nest of Myrmica, I chanced upon a dozen or so Atemeles - a sight to fill every coleopterist's heart with joy. It is at this time of the year that the beetle-collector hunting in ants' nests can reap his richest harvest, nor is it so unpleasant to collect, the ants themselves not having yet "tuned up" to the warmth, and are still sluggish, and bite and sting less fiercely than in the later days of spring when the summer nests have been completely established. Naturally, one has to search more intently at this time of year, as many species still decice upon remaining in the obscurity of the depths of sphagnum, decayed stumps, and at the roots of the long grass and heather. Acanthomyops niger was a good example of this, although, when I visited Esher Common two days later, these little black insects were already emerging from the depths of their winter retreat to the drier surrounds of pine stumps.

I also tried to find our English Slave-making ant, Formica sanguinea, on Weybridge Heath, and, as usual, the nests were very hard to discover, and when at last I did come across one, I could find but one solitary worker with a few of its slaves, Formica fusca. F.sanguinea is a very particular species, as it invariably moves from one nest to another, according to changes in temperature, moisture or whether it has been disturbed too frequently for its piece of mind by some intruding insect-hunter. One can find the deserted nests of this ant all over the heath at Weybridge, one of the few localities in this country. Formica rufa, on the other hand, appears to be a much less sensitive ant, and a single colony has been known to tenant one nest for more than sixty years. I myself have known the same heap of pine needles and birch leaves to have been used for many years in Surrey.

There is something extraordinary in standing near a rufa nest at this time of year when the sun is beginning to make itself felt. The ants pile on top of each other in their thousands and sun themselves. Should a cloud pass in front of the rays the ants seem to melt into nowhere. They will climb up nearby stems and tree-trunks, and if the day is still and there is no noise around you, you can hear them falling off their perches, so that the effect is the sound of thousands of little scratchings. Then on opening up the nest, there are thousands more attending to the needs of the brood. Some are still only in the egg stage, others have progressed as far as the larval stage, but they all of them have to be washed and cleaned with the disinfectant liquid from the salivary glands of the workers. Lower down, we may be lucky enough to find the huge chestnut brown queen, surrounde by workers who are licking her too, and shepherding her from one chamber to another to avoid the intruder. In the bigger rufa nests there will be more than one fertile female, and all of them will work at full pressure at egg-laying for the year's second brood to appear in June to September.

Then I discovered a few colonies of Leptothorax acervorum which do not seem to trouble about changing nests to suit the climatic conditions. Their colonies are always minute, and one can generally find about three or four fertile females in a colony of some thirty workers, perched in the cracks between the decaying bark and the inner part of a decaying tree stump. Unless most specie of ants they do not scurry away from the sudden burst of light which greets them the entomologist tears away the protecting bark; they remain with their queens and brood quite phlegmatically.

By the time the warm weather really sets in, many other retiring specie of Formicidae will come nearer to the surface of the ground to take up their summer quarters, and it is then that the real enjoyment of ant-collecting is felt. It is not too hot to work for a few hours on end -- backaching certainly - but every fresh nest which is dug up can present something new, so that the ant-collector should not walk past a grass mound and not to himself with a knowing smile, 'That is Acanthomyops flavus', because even with such a common species we can find not only rarities in the shape of guests in the nest, but it is always just possible that the nest contains a variety of the species which is most uncomm Often, too, two species of ants may be found to be living together in the same hillock. It is interesting to dig them up together and take them home, instal them in a grass formicary and watch their combined development. I must admit that there are not many more things in this world which give me more sustained pleasure than daily observing the incipient colonies which I have artificially installed at home from the countryside. With careful treatment, there is no reason why a robust species of ant should not let its colony exist for many years in perfect contentment. Yet there should be no need for me to enter into rhapsodies; every one of you has the same feeling in his particular branch of entomological study.

I have often why it is that so few entomologists have troubled themselves about the study of ants. In fact, I have the impression that most of them find that side quite an abnormal pursuit. Ants do not appear to be beautifu to the naked eye, as do the coleoptera and lepidoptera, nor is there such a vast selection of species in this country - a matter of forty odd - and to the layman the species all appear to be much of a muchness in size and shape, but once you have studied them a little more carefully, you will see that each species has its own significant characteristics and personality. Ants are far more diverse in their habits than their near relations, the bees and wasps. In fact, their social structure is, in some cases, quite baffling to the experts themselves.

No doubt it is rather a disadvantage not to be able to show your friends a large and impressive cabinet full of gorgeous insects, but those who are in the same unfortunate position as myself of having to live in a comparatively small flat almost inside London itself, will appreciate the fact that the collecting of ants does at least give you the opportunity of confining your collection to the minimum of space! For those who are keen on keeping insects alive there is no more enjoyable and instructive branch of entomology than this.

A. N. BRANGHAM.

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QUERIES

No. 52 H.M.Irving sends a query relating to the urticating properties of the hairs of some Lepidoptera. Can anyone give a list of species which possess this mode of deflense? Then, is there any cure obtainable when once the irritation has been set up? Again, has any explanation been put forward as to why some people are affected more than others, as this might throw light on methods of prevention?

No. 53 Have our breeders of long experience any records of cannibalism among Lepidoptera? We should like to receive records of observed or suspected cannibalism, and quotations from past writers on this topic. Care must be taken in attributing mere disappearances to this, as there may be other causes. One case I was asked to investigate of continued disappearance of larvae in a species which usually behaves perfectly well even under the most trying conditions, was finally proved to be due to the presence in the breeding cage of a predatory ground beetle which came forth from some hidden cranny to do its dirty work after darkness had set in! A number of larvae of *Aplecta tincta* of mind last year decreased in numbers with astonishing rapidity, leaving no trace. The mystery was not cleared up until some weeks later when I found larvae of this species, which does not normally occur in the district, feeding by night on the loganberries at the other end of the garden! This is a species which, like the earwig, seems to be able to push through surprisingly narrow cracks to gain its freedom.

B. A. C.

No. 54 What species of laurel is the best for planting in gardens to use in the making of "laurel bottles"?

B. A. C.

No. 55 Are there any grounds for supposing that late-emerged examples of a species tend on the whole to be *darker* in colour than the earlier hatch? For several years I have noticed than melanic specimens of *H.leucophaearia* var. *merularia* (Spring Usher), which I find occasionally in the Forest of Dean, are all *late* specimens; this season I took two on the 6th of March, when they were the only *leucophaearia* I saw all day, whereas a fortnight earlier, when the species was abundant, all the specimens were of the typical or of the banded (*marmorinaria*) form.

I have noticed the same phenonmenon in the case of *H.marginaria* (Dotted Border). Late January and early February examples seem on the whole to tend to be pale in colour and large in size; in late February and early March the opposite is true.

This may be chance, but some data on the subject would be welcome.

JOHN MOORE.

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REPLIES TO QUERIES

No. 2 (See J.23 p 9 also). Last summer I received eighteen *S.ligustri* (Privet Hawks) larvae from D.O.Dykes, and on arrival placed them in a sleeve on a privet hedge. When next the sleeve was opened a month later, the pile of excreta was removed, together with a few empty (moulted) skins and some earwigs. The sleeve was then closed up again for two or three weeks until they were ready for removal to a breeding cage for pupation. Only six larvae were found but no half-shrivelled skins were seen among the frass. I [illegible] earwigs, which had somehow got in, for attacking the larvae, presumably when small, but, of course, it is possible that the larvae [illegible] and the earwigs ate the carcasses.

E. A. C.

No. 5 G.Burt sends us cuttings from an American magazine "Mechanics and Handicrafts", protions of which we reproduce here, with acknowledgments.

"Perhaps the most effective form of light trap is the one which draws the insects and then electrocutes them. The lure, a lamp, is enclosed in a metal grill or grating charged to a high potential by a small step-up transformer. The light attracts the insects to the grill where the electric charge kills them instantly. Because of the small current capacity of the high potential transformer, the trap is harmless to animals, birds and human beings. The hum of the transformer, like the hum of myriad insects possibly aids the light in luring the pests. At least four firms are now manufacturing this type of trap.

Various colours of light have been used. and it was found that deep blue and highly brilliant light has the most potent insect appeal. Red light lures very few indeed. Ultra-violet rays allure, but it may be [illegible] the blue-green colour of the light that accompanies the [illegible] as to the radiation itself.

Up to 200 watts, the brighter the light is, the greater the insect allure. Above this figure the intensity of the light either confuses the insects or else illuminates the adjacent area so well that insufficient contrast is offered to draw the insects to the trap. When too bright a light has been used insects have been seen to fly towards the trap, around it, over it and under it, but rarely into it.

Light traps may even supplant poison [illegible] insect [illegible]. Arsenical sprays, for example, are being used so [illegible] and experienced investigator said seriously not long ago [illegible] have [illegible] to spit out the first bite of arsenic-covered skin and then eat their way merrily into the apple". The light trap often works hand in hand with the poison spray, the catches yielded being used as indicators in adjusting the spraying time so as to kill the maximum number of insects [illegible]".

(See also [illegible] Reprint pp. [illegible] 26 29)

No. 35 (See also V.19, p.77) I strongly suspect that the small larvae "of the clothes-moth type" are not lepidopterous at all, but those of the museum beetle, Dermests museorum, which has been causing havoc among specimens in an old cabinet which I have recently acquired. The larvae of this museum pest do not appear to be affected by the somewhat low concentration of naphthalene vapour obtainable in a drawer or storebox. and neither are the ova or pupae killed by carbon tetrachloride vapour. and probably the larvae not even by contact with the liquid. A fortnight after having pinned moth balls in the corners of the glass topped drawers, larvae were found apparently enjoying the best of health. although I was assured by a research student who had performed some experiments on the species that "they do die eventually" which fact I do not doubt! The best treatment I find is to make up a saturated solution of naphthalene in carbon tetrachloride, and pour into the drawer (not over the insects, although it would do no serious permanent damage) and close up. If the insects are not touched by the liquid there is no need to aerate the box or drawer before an open window a few hours later. and the carbon tetrachloride will still be in sufficient quantity to kill young larvae or imagines when they hatch a week or two later. In addition, minute crystals of naphthalene are formed, even within the cork or peat, and will effectively kill insects that are hidden there. If phenol (glacia carbolic acid) is also dissolved in the carbon tetrachloride, the liquid will kill fungal spores on the paper or cork, but great care must be taken to see that it does not touch the wings of lepidopterous insects. If the drawers have been whitewashed with zinc oxide, there is some chance of the phenol tending to make this patchy. The glas lid to the drawer will, of course, have at the same time to be washed to remove fungal spores or hyphae, while the sides of the drawer may need to be likewise treated with some fungicide, but if aqueous, care must be tak in drying lest the wood should warp and prevent easy sliding on the runners. If the cabinet can be kept in a room warmed in winter, and with a constant open window there should be no trouble with mould. I used to suffer from this, but have had no recurrence of the trouble since going in for a permanently open window (room is rarely warmed, and walls are usually damp).

If Mr. Rollason will send me a specimen of the maleficent larva I will tell him whether it is that of one of the clothes moths or not; the latter are curable by naphthalene alone. Naphthalene, by the way, is not hygroscopic, and it is but slightly soluble in water, so any moisture present in the drawers can in no way be attributable to it.

B. A. C.

No. 43 Round setting board are used by no modern entomologists. The setting boards of today are flat or with just a slight bevel (although dealers may sometimes recommend the old types to help diminish their stock of these!). The insects are set about two-thirds of the way up the pin. It is important to see that all your insects are alike as regards depth of groove, so that you have all your specimens at one level - nothing looks worse in the cabinets than insects pinned both high and low on the pins.

Most collectors use black pins because they are not so conspicuous as white ones in the drawers. (My own opinion is the other way round in this respect, although I use black pins where possible. Ed.). For British butterflies and noctuas I use Kirby Beard & Co.'s No.6 and 7 pins, for hawk moths black No.3, and Nos.9 and 10 for geometers. White pins in any case should not be used for such things as the swifts (Hepialidae), the Goat moth (Cossus cossus), the Bullrush Wainscot, or any of the other moths liable to grease, as the latter will corrode the white pins which are generally made of brass (and will sometimes do the same to brass pins enamelled black, as I have found to my cost. Ed.). The part of the pin in the body of the moth corrodes away and is liable to break off. If the pin manufacturers could be persuaded to make pins of rustless steel it would no doubt solve a lot of the entomologists' worries as regards rusting and corroding; they could be left bright or enamelled black according to taste, as is done on the continent.

J. WALKER.

(Wish heartily seconded. If non-corrosive steel pins could be obtained in British sizex, even if headless, I am sure they would be immediately welcomed by the great majority of British entomologists. It would also save much trouble and expense to collectors, museums and institutions, who are at present compelled to import these from abroad. It is a great nuisance having to cut down continental pins, though perhaps not so depressing as to see one's best specimens spoilt by verdigris. I will see what a letter to a manufacturer will do. Ed.).

No. 49 "Naphthalene is destructive to all forms of low life and hence is antiseptic in a high degree, but must be intimately mixed with the substances upon which it is to act...............Naphthalene is employed as an antiseptic for the intestinal canal in typhoid fever, diarrhoea, both acute and chronic, tuberculous diarrhoea and dysentary. It renders the urine aseptic and may be employed for vesical catarrh. It is used internally for asthma, verminous affections, the chronic pulmonary catarrh of the aged, and chronic bronchitis with copious secretion. It is said to be effective as a teniacide, also as a vermifuge for seat-worms given by injections gr.Xv to XXX in oz.111 of olive oil. Burned in the patient's room, it has given excellent results in pertussis, giving force to the belief that the well known benefit from taking children to gas-houses (gas-works) for whooping cough is due to the naphthalene fumes rather than those of the gas-tar. Lacally naphthalene has high value for indolent ulcers, sloughing wounds, open cancers and pus cavities. Painted over organic remains it effectually prevents the ravages of insects, and has largely supplanted camphor for protecting woollen clothing from moths"

(Potter - "Theurapeutics....." 1909 ed. pp. 347-8)

I can find no mention of paradichlorobenzene in my pharmacology. However, I do not believe that this latter is poisonous, as it is used here extensively for the moth-killing propensities, and even then the concentration of fumes in a closed container is necessary. Sorry I can't give you any more definite information, but would ignore it as a dangerous poison, especially in very dilute "dosage".

DR. W. G. WATT.

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CALENDAR

Lepidoptera in April and early May.

Many of those mentioned in the last issue will now be fully out, but, judging from the type of weather prevalent at the time of writing, it looks as though most May insects will be out in April. A list of those now on the wing would be too long to mention here, but the following are among the more interesting:-

H.fuciformis (Broad-bordered Bee Hawk) and H.tityus (Narrow-bordered Bee Hawk) fly in the sun over Rhododendron, Ajuga, Ragged Robin and other flowers. D.trimacula (Marbled Brown) and D.chaonia (Lunar Marbled Brown), feeds on lone oaks; P.tremula (Swallow Prominent), P.dictaeoides (Lesser Swallow Prominent), N.ziczac (Pebble Prominent), N.dromedarius (Iron Prominent), N.trepida (Great Prominent), L.cuculla (Maple Prominent), L.camelina (Coxcomb Prominent), P.palpina (Pale Prominent), P.curtula (Chocolate Tip), P.pigra (Small Chocolate Tip); all the Prominents may be taken at light; D.pudibunda (Pale Tussock), M.rubi (Fox Moth) (males fly very fast over heaths by day), D.falcataria (Pebble Hook Tip), D.binaria (Oak Hook Tip), D.cultraria (Barred Hook Tip), and D.lacertinaria (Scalloped Hook Tip) also fly in the sun over their respective food plants; S.menthastri (White Ermine), S.lubricipeda (Buff Ermine), A.euphorbiae var. myricae (Sweet Gale), A.cinerea (Light Feathere Rustic), A.puta (Shuttle-shaped Dart), A.exclamationis (Heart and Dart), A.ipsil (Dark Sword Grass), A.basilinea (Rustic Shoulder Knot), all the noctuas being taken at sugar. C.verbasci (Mullein Shark), C.scrophulariae (Water Betony) are rarely met with in the imaginal state; A.myrtillae (Beautidul Yellow Underwing), H.tenebrata (Small Yellow Underwing), E.mi (Mother Shipton) and E.glyphica (Burnet Companion) fly in the sun. Geometers emerging now include N.viridaria (Small Grass Emerald), I.lactearia (Little Emerald), A.virgularia (Small Dusty Wave), I.amata (Blood Vein), E.porata (False Mocha), E.punctaria (Maiden's Blush), E.linearia (Clay Triple Lines), E.annulata (Mocha), E.orbicula (Dingy Mocha) and E.pendularia (Birch Mocha) (taken by B.A.C. on March 30th 1938 in Surrey, with T.punctularia - Grey Birch) . Most of these are best obtained with a lamp after dark, but may also be flushed from bushes or seen on fences by day. M.virgata (Oblique Striped), M.murinata (Drab Looper), A.plagiata (Treble Bar), A.efformata (Scarce Treble Bar), C.rufata (Broom Tip), L.viretata (Yellow Barred Brindle), L.hatterata (Seraphim), L.sexalisata (Small Seraphim), E.certata (Scarce Tissue), E.silaceata (Small Phoenix), C.corylata (Broken Barred Carpet), T.obeliscata (Grey Pine Carpet), T.variata (Spruce Carpet), C.unidentaria (Dark-barred Twin-spot Carpet), C.ferrugata (Red Twin-spot Carpet) C.designata (Flame Carpet), X.montanata (Silver Ground Carpet), X.fluctuata (Garden Carpet), X.sociata (Common Carpet), H.impluviata (May Highflyer), H.ruberata (Ruddy Highflyer) and A.berberata (Barbary Carpet); most of the Pugs appear in early May; E.linariata (Toadflax), E.irriguata (Marbled), E.pusillata (Dwarf), E.indigata (Ochreous), E.insigniata (Pinion Spotted), E.venosata (Netted), E.jasioneata (Jasione), E.albipunctata (White Spotted), E.vulgata (Common), E.virgaurata (Golden Rod), E.lariciata (Larch), E.castigata (Grey), E.helveticaria (Edinburgh), E.satyrata (Satyr). E.valerianata (Valerian), E.plumbeolata (Lead Coloured), E.pygmaeata (Marsh), E.nanata (Narrow Winged), E.dodoneata (Oak), E.exiguata (Mottled), C.vittata (Oblique Carpet), L.marginat (Clouded Border) appears among sallows, L.adustata (Scorched Carpet) among spindle, A.pictaria (Sloe Carpet), B.bimaculata (White Pinion Spotted) among cherry, sloe and plum, as for B.temerata (Clouded Silver), C.pusaria (Common White Wave) and C.exanthemata (Common Wave) these are found in open woods, damp heaths and lanes, while N.pulveraria occurs in similar situations, but is more local; S.lunaria (Lunar Thorn) and G.bidentata are occasionally to be seen on hedges or fences. S.notata (Peacock) and S.alternata (Sharp-angled Peacock) are local among birch and alder, H.abruptaria (Waved Umber), B.cinctar (Ringed Carpet), T.crepuscularia (Small Engrailed), T.luridata (Brindled White Spot), T.consonaria (Square Spot), T.punctularia (Grey Birch), F.carbonaria (Netted Mountain Moth), F.limbaria (Frosted Yellow), E.atomaria (Common Heath), B.piniaria (Bordered White), C.clathrata (Latticed Heath). T.apiformis (Hornet Clearwing).

Butterflies out now include E.cardamines (Orange Tip), L.sinapis (Wood White), A.euphrosyne (Pearl-bord.Frit.). P.megaera (Wall), C.pamphilus (Sm.Heat C.rubi (Green Hairstreak),C.phlaeas (Sm.Copper).A.Agestis (Brown Argus), P.icar (Com.Blue),C.argiolus (Holly Blue), N.lucina (Duke of Burg.Frit.), P.malvae (Grizzled Skipper), E.tages (Dingy Skipper).

P. A. C.

WANTS & EXCHANGES

D. T. Lees-Smith (No.110) would like to hear from any boys who might care to receive Swiss butterflies from him. He himself wants to obtain specimens of Polyommatus astrarche salmacis (Castle Eden Argus) and artaxerxes (Scotch Brown Argus).

Major Blackiston asks for as many Silver Y moths this summer (preferably unset or alive - if killed giving name of killing agent used) as members can send him, stating place of capture, for use inan investigation on this species. They should be sent to the Booth Museum, Dyke Road, Brighton, 5, Sussex. The Museum also has now a "Perrey" prismatic binocular microscope (British Museum Pattern) and a couple of 1/12th inch oil immersion microscopes, so members of the Society will know where to come if they need such am instrument - the Museum will be very pleased towelcome such enquirers.

A.Horder (No.85) has nine setting-boards 7" long, ranging from 1½" to 3" English pattern. He would be glad to exchange them for flat boards.

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MEMBERSHIP CHANGES

Newcomers

No. 154M Major F. H. W. Ross-Lewin, Woodlands, St. Olaves, Great Yarmouth, Norfolk. (Lepidoptera).

Change of Address:

Douglas Watson (139) to Crossways, Hightown, Ringwood, Hants.
D. O. Boyd (54) to Land Settlement Association, Crofton Hall, Thursby, Carlisle.

PRESENT TOTAL: 138.

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ERRATA - J.2[illegible] Pg 11 (Contents and p20) for John E. Knight read "N. A. B. Collyer". Contents (p 12, for "C. J. Ford" read "[illegible] J. Sard"; p.22 Calendar, line 8, should read "In 1933, on April 15tn, I took two specimens of P.fuliginosa ...". Membership Changes (J 23 p 12) O. Curd lives at Prescot, not Prescor.

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> Those requiring data labels or other printing work are asked in future to write direct to the Society's printer, A. T. C. SIMPSON, 51, BELSIZE AVENUE, LONDON, N.W.3 to save time and postage. All labels are done on thick white paper, but we cannot promise to carry out orders immediately. 4½ pt. ([illegible]) 4 lines 7/6 per thousand, 1 line 5/- per thousand; 6 pt. 4 lines, 6/- per thousand, 500 3/6, 250 2/-, 1 line 4/- per thousand, 2/6 per 500.

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BEETLE COLLECTING IN SPRING.

This is the season when beetles emerge from hibernation, and many kinds are now to be found, even though it is generally too early for beating and sweeping, which must wait until May. Both groups of the water-inhabiting coleoptera - the Dytiscidae and Hydrophilidae - are to be taken in abundance in ponds and streams, and many species of Carabidae or "Ground Beetles" will be found under stones and logs etc., or running on the bare ground.

Among the first group the large Dytiscus marginalis will almost surely be met with by working the water-net among the weeds near the banks of ponds, and will often be noted rising to the surface for air, when a quick thrust with the net may secure it.

Dytiscus punctulatus is much more local, although often common where found, and prefers running streams rather than ponds.

The larvae of these beetles are very predaceous, and a nearly full-fed larva of D.marginalis which I once reared in a small tank, devoured no less than thirty-seven good-sized tadpoles in two days. Shortly after this it left the water and buried in some very wet mud, where it pupated after having made a large roomy cell. It formed into the perfect insect about five weeks later.

The species of Hydroporus, Agabus and Rhantus are all much smaller, and some inhabit ponds and still water, while others like running streams. The fen country round Huntingdonshire forms an admirable hunting ground, and here I have taken the local Hydroporus halensis in a small brook, and ponds have yielded Agabus abbreviatus, A.unguicularis, A.femoralis and Rhantus notatus, together with R.grapii.

The Hydrophilidae will also be much in evidence now, and large numbers of Helophorus and Laccobius, etc., can be found instagnant water which contains plenty of weeds.

Hydrophilus piceus is the largest species, and is now very local, but occu in ponds in some eastern and southern counties in spring, and again in August.

The muddy banks of ponds, streams and also river estuaries should be examined for many kinds of the genus Bembidion in the Carabidae. One of the group which may be looked for early in the season is Lebia chlorocephala. Its colour is brilliant deep green, with orange legs and thorax. It occurs locally in chalky districts under stones, logs &c., and I have found them under the bark of tree stumps in woods.

In some parts of the country, the well known "Oil Beetle", Meloe proscarabeus may be seen crawling on sandy heaths and paths on bright sunny days. Old trees and logs in all stages of decay in woods and forests yield many good species at all times of the year, and during winter and early spring I have obtained Melanotus rufipes, Elater lythrapterus, E.pomorum and E.balteatus in soft half-rotten birch logs, and numbers of Melassis buprestoides will sometimes be discovered in dry oak branches, and in rotten ash stumps Synodendron cylindricum and its larva is often most abdndant.

Collecting on the above mentioned lines will occupy much spare time until the beating season commences.

D. TOZER.

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OBSERVATIONS

G.D.S.Greig in April 1937 found a Saturnia pavonia (Emperor) cocoon, which emerged on May 12th as a dark purple variety - it was a female.

C.H.Veale took a male Agrotis segetum (Turnip Moth) at Bexley at the end of March 1938, exceptionally early for this species. Other members comment on th exceptionally early season, having noticed numerous species one or two weekes earlier than they had ever done before.

The Endromis versicolor (Kentish Glory) pupae of D.E.Dale commenced to hatch at the end of February of this year, these having been bred from Aviemore sto On March 2nd a fine melanic male emerged, two more melanic males and a very fine female appearing between then andMarch 19th. Mr. Dale paired the female with a normal male, but only allowed it to lay one cluster (26) of ova, as he did not want it to get damaged. He describes the males as very dark brown with no white markings, and black body, but omits to mention what the female looked like. Melanic abbrrations of this species Mr. Dale believes to be very rare, if not unheard of previously. Can anyone enlighten us further? Meanwhile we wish succe in the rearing of his this year's broods of the species in the hope that the race will not be lost.

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

PRESENTED

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The next Bulltin will be issued
in early June.

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THE AMATEUR ENTOMOLOGISTS' SOCIETY.

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The Exchange Column is free to all members, and the Editors hope that full use will be made of it. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus and live insects, leaving that of set, pinned and unpinned insects till they have had more experience. The Editors offer no guarantee for any goods offered in the Exchange Column, and they are in no way to be held responsible should the privilege allowed be abused. Unless members state to the contrary, exchange notices will be inserted in the Bulletin once only. For addresses, please refer to the membership list and subsequent membership changes list.

Anyone at present not recording migrant lepidoptera and dates each year of first noting the species mentioned on the phenological list, who would care to do so, should write to B.A.Cooper for free literature and information. Any further information on migration will be willingly given by Captain T. Dannreuther, Windycroft, Hastings, and on Phenological Recording by Major H.C.Gunton, Rathgar, Gerrards Cross, Bucks.

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THE ENTOMOLOGISTS' BULLETIN

is published by the Society nine times per year. Although of interest to all amateur collectors, it especially sets out to assist the less advanced collector and student of entomology. Beginners are especially welcome. If not satisfied with the Bulletin, write to the Editor about it.

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THE ENTOMOLOGISTS' BULLETIN.

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol. 3 No. 26 May 1938

Why is there so much antagonism between collectors of Lepidoptera and collectors of other orders? How often does one hear "So-and-so - Oh, he's only a lepidopterist" or "Don't worry about him - he merely collects beetles". Why this innate snobbery between one class of entomologist and another? The economic entomologist looks down at the amateur as an exterminator of harmless and beautiful insects for no apparent reason, while the average amateur looks upon the biologist with equal disfavour as one who endeavours to take the romance out of bug-hunting. This is not as it should be. Entomology as a sport and entomology as a science are not separate and distinct entities, but different outlooks on the same subject. The scientific sportsman should be the brother of the sporting scientist, but no, it is not so. Those with scientific bent endeavour to hide up the fact that they collect because they enjoy doing so, while the general run of collectors poo-pooh their scientific friends' outlook as one of making fauna lists which are doomed to become obsolete in a year or two, and of changing generic and specific names as soon as they have got used to the last alteration. (Needless to say, these are two of the so-called"scientific" aspects of entomology that are most tampered with by amateurs).

This brings us to the question - Why do we collect? Most of us do not know - we collect because we enjoy doing it. But we like to put forward high-sounding claims for the multitudinous advantages our hobby has over other equally worthy pursuits, if only to justify our behaviour in the eyes of non-entomological relatives and friends.

The first refuge the apologist seeks is that based on our technical sounding title, namely that we collect for the glory and honour of science, and are therefore on a higher plane than the mere collector of stamps and cigarette cards, of autographs and curios. The work (and often it is hard and discouragin entailed in building up a collection, makes the results seem worth while; some collectors refuse to partake in certain forms of collecting, as being too easy, requiring little or no skill or patience to amass specimens. Besides this active pleasure, there is, however, a passive enjoyment to be gained from the achievements of others, by the examination of other people's collections, and by reading. Oddly enough, though, I derive little pleasure from the examination of my own captures when once they have reached the cabinet stage, using them later almost exclusively as objects of reference

Another "excuse" frequently put forward in these days of advertised mental and physical fitness, is that the hobby takes us out into the open, trains our powers of observation, and educates us in the ways of nature. Unfortunately a very large number of entomologists have become so preoccupied with their collecting that they are oblivious to all but the vaguest details of their surroundings and the beauties thereof. Again, it cab scarecly be recommended that standing in the drizzle at midnight round a collecting lamp, and driving home in the small hourse, not in the best of spirits, is conducive either to health, brain-power or physique.

The primary joy of collecting, to my mind, lies in the fact that, as in angling, one never knows what may turn up next. Mr. Walsh's recipe for successful collecting is to look for the rarities and the commoners will follow automatically. To be sure, I have made pilgrimages to the haunt of this and that local species, and [illegible] taken it commonly, but I have never enjoyed the day so much as when I have met some, perhaps common or widely distributed species, out at a time when I was least expecting it.

The interests of breeding are much the same as those of horticultre; a garden full of flowers may be more spectacular than a cabinet full of insects, but the latter are certainly more lasting To collect solely for the beauty of the specimens is often despised as being on a par with stamp collecting, but surely no one would deny a man his garden on these grounds. At the same time it is surely [illegible] a narrow [illegible] adopted by those whose collecting 'takes up so much time' that they have no use for breeding; I can only assure these person that they are missing a great part of the enjoyment to be got out of the hobby.

This more especially applies, I think, to collectors of coleoptera and orders other than lepidoptera, which are reputed to be difficuly to breed, but only no doubt because it has been so little attempted that the correct ways of doing so are unknown. The death-watch beetle, for example, is a well known pest in old and rotting wood; but it was not until quite recently that it was discovered that it fed, not on the wood itself, but on the hyphae of a fungus which occurred in the wood in such situations. Among lepidopterists there appears to be a prejudice against breeding a species not actually taken by the collector himself; this is none too easy to understand, especially as among gardeners there appears to be a reverse tendency, namely, that if a plant occurs in the wild it is unsuitable for cultivation, often being termed a "weed" if it appears of its own accord. I, personally, should like to see a great increase in the amount of breeding undertaken by members, and not merely of their own captures but also of foreign species after the style of our horticulturists. A number of people at one time or another breed the large"wild"silkmoths, but they never seem to get any farther. Many of the allies of our British species are exceedingly interesting to rear, but, of course, care must be taken to see that they do not escape and become pests. Ant collectors seem to be the only entomologists to realise that breeding is an end in itself, and one of very great interest. If the analogy with gardening is still not accepted, and purchase of specimens taboo, there is still exchange open for those who wish to breed species they have not yet met with. The breeding of varieties by selection and deliberate crossing is greatly facilitated if several people work together to prevent the bad effects of inbreeding.

In conclusion, therefore, I would once more urge members to enlarge their scope as muchas time will allow, to co-operate with other collectors and to endeavour to introduce other newcomers to the hobby.

All members will be glad to learn that Mr. Walsh has now recovered from his unfortunate operation, but will be sorry to hear that, owing to the loss of an eye, he will be unable to take so active an interest in entomology as he had hoped.

We have one more name to add this month to our Advisory Panel. D. O. BOYD, of the Land Settlement Association, Crofton Hall, Thursby, Carlisle, has offered to give what assistance he can to those needing advice on the Hymenoptera Aculeata, excepting Ants, for which members are asked to write to A. N. BRANGHAM. Mr. Dyson, of whom it should have been mentioned earlier that he is a holder of the National Diploma of Horticulture, has very kindly offered to write a series of articles on the propogation of foodplants. It is suggested that the series might be made to include a list of species that feed on these plants, after the style of Scorer's "Log-Book". This could only be accomplished if members would send us lists of additions to this helpful volume, of which labge numbers can be found, even by the beginner without difficulty. I shall be glad to hear what members think of the suggestion.

B. A. COOPER.
HON. EDITOR.

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SUCCESSFUL INSECT COLLECTING

The following remarks are made from the standpoint of the Coleopterist, but they apply equally well to any branch of the Insecta.

We hear a good deal of the luck of the beginner, but there is no doubt that in the long run success in the collection of insects comes to the man who studies his hobby intelligently and to careful forethoughtadds the experience born of long practice.

I would suggest then that the first essential in building up a good - especially local - collection is to gain a good knowledge of the district. Many localities that are deservedly classed as "rich" collecting haunts owe their reputation to local men who know every part of their district and not to chance visitors who worked the area during a more or less brief holiday. Many districts already have local lists of their fauna either published or in the record books of some Natural History Society, and if these can be consulted, or better still, if help can be obtained from some competent local student of the Order, a good start will have been made. The best districts are, of course, those with the greatest variety of habitat - coast, hills, woods, fast, slow and stagnant water, etc. - with varied soils, varied woodland and the like; but in the [illegible] districts in which I have lived - and some of them were very unprepossessing - there has never been one which did not produce something [illegible] quote *Pterostichus adstrictus* and *Miscodera arctica* at the foot of Tees-side slag heaps, *Pterostichus cristatus* and *Deronectes borealis* among the coal pits of North East Durham, and *Nebria livida* and *Bembidion redtenbacheri* on the boulder clay cliffs of East Yorkshire.

On going out for a day's collecting, even the advanced worker will find it best to search for some special insect, preferably a somewhat uncommon one which needs much search. This is much better than indiscriminate collecting, such as general sweeping or general beating. While the rarity is being sought, common insects will turn up as a matter of course. The beginner will need these and will collect them "in his stride", while at the same time he has the hope of catching the prize of which he is in search. If a man collects more than one Order - say the Coleoptera and the Hemiptera - which go rather well together, he will find it best to restrict himself almost entirely to one group during a single day's collecting, while keeping his eyes open for rarities of the other group.

Having decided on the insect which is to form the main object of the day's search, the collector should obtain as much information as he possibly can as to its bionomics - the time of year and the time of day at which it is active, its food especially if vegetable, the part of its foodplant on which it is to be found - flowers, leaves, under the leaves on the ground, at the roots, in the stems, etc. If such a plant is local it must be sought for, or perhaps his botancial friends will tell him where it grows. As an example, I can nearly always find the very local weevil, *Apion pallipes*, in my own district by sweeping Dog's Mercury (*Mercurialis perennis*) in woods during the middle fortnight of October or in smaller numbers in May.

Armed with this information he should look round mentally or actually for the locality that seems most likely to yield the desired insect. Smoe men possess an uncanny knack of spotting a rich locality, but most people can become reasonably skilful with care and experience.

Finally, patience is needed, or perhaps we should say PATIENCE. If an insect is rare, obviously long search is necessary as a rule to fill our series; by sheer good fortune we may perchance "strike it rich", but generally hard work is the only sure way to success. In some cases one specimen an hour is very good indeed, and the beginner must not be disheartened if at the end of the day he comes home without his disideratum; he will doubtless have numerous captures of lesser value that will make the day worth while. It should be remembered that patience does not necessarily mean obstinate plodding at one worthless locality; many species are wonderfully local; the rare weevil, *Anoplus roboris*, used to occur with us on only one alder tree, and there it occurred for a good many years until a severe summer storm washed all the newly emerged insects out to sea; similarly the well known locality in the British Isles for *Bledius dissimilis* is a thin layer of sandy clay in a few yards of cliff at Bridlington. But, allowing for this, if the collector will work assiduously, patiently and intelligently, looking for rariti first and taking the commoners as they come, there is no doubt that he will fill his store-boxes far more rapidly than with mere general desultory collecting.

GEO. B. WALSH.

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DRAGONFLIES IN MAY.

This is the month in which the dragonfly fauna of the countryside can really be said to wake up. Writing at the end of March, it is difficult to say what the vagaries of the weather may do between now and the date of publication, but if the present warm weather continues conditions should be very favourable, as the shrinking of pools, etc., in dry weather tends to concentrate the organisms (small aquatic insects, tadpoles and so forth) on which the nymphs feed, thus enabling them to get more food, and quicker development may result. At the end of April, then, we may hope for the first sight of *Brachytron pratense* flashing over canals and slow rivers or along the edges of ponds and lakes, and it will be seen in increasing plenty till the end of May, as its season extends well on into the summer months. At about the same time, or a little later, *Cordulia aenea* will appear, often in very large numbers though rather local in its distribut

The well known and easily recognised Libellula quadrimaculata will be seen now, often very abundant; its season extends from the end of April, through June and July, to early August. Libellula depressa, too, will be seen now, but not usually in such large numbers as the previous species. Also early in the month the slender red Pyrrhosoma nymphula will appear over ponds and boggy areas. Ischnura elegans, one of our smallest and commonest dragonflies, appears early in May and continues through the summer till September. The even more abundant Enallagma cyathigerum puts in an appearance a shade later on the average. Coenagrion puella and C.pulchellum will be seen about the middle of the month in company with these two species.

Towards the end of May one may say that the dragonfly season is really in full swing, as in addition to the common species mentioned above, many others, some common (e.g. Agrion virgo and A.splendens), others local (e.g. Somatochlora metallica, Coenagrion mercuriale), and some of the real rarities, such as Somatochlora artica, Aeschna isosceles, etc., may be beginning to appear. In just such a year as this the Sympetrini and members of the Aeschna genus other than A.isosceles, should probably be the only absentees from the dragonfly list at the end of May, or, at any rate, by the middle of June.

A. F. O'FARRELL.

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COMMENTS AND NOTES

M/S. K. Lees-Smith notes having seen near Zurich some Brimstone Butterflies, the first on March 3rd, and also a Small Tortoiseshell. Another small brownish butterfly she was unable to see closely enough for identification purposes (was it a Brephos?). D. T. Lees-Smith also notes A. urticae at Villars sur Bex on the sixth. Nearer home, the Editor [illegible] sunning itself at South Kensington, London, on the first of the [illegible] while ants ([illegible] niger) were to be seen in numbers two days later in the same spot. Of moths, Hybernia marginaria, Phigalia pedaria and Anisopteryx aescularia were common near Harrow, Middlesex, on February 5th, having no doubt been out since the end of January, while Polyploca flavicornis (Yellow Horned Lutestring) was first seen by the Editor on March 5th in the London district, but these, too, had the appearance of having been out some days. We should like to have articles from time to time on the occurrence of Lepidoptera in different districts [illegible] general opinion among members that we do not have enough of this sort of thing. Also it might help to encourage collectors to take an interest in species which they do not want for their collection, and to keep diaries, not merely for the purpose of filling in their phenological forms correctly, but also to serve as a useful record of interest in years to come.

B. A. C.

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THE CLOUDED BUFF.

In his most interesting account of collecting in North West Scotland G. H. W. Cruttwell mentions the capture of several D. sanio (Clouded Buff) females between 12th and 27th June 1937 (J 24, pp. 16-18).

On the 27th June of the same year while collecting in Kent I took two fresh males of this species, flying in the afternoon sunshine among small Birch and Heather, and on 1st July a third, afterwards liberated. It is curious to compare these dates for such widely separated districts - one might expect earlier emergence in Kent. I saw no females.

I was present when a female D. Sanio was captured on or about the 15th August 1927 in perfect condition near here (Nottingham). This the captor lent me for the purpose of obtaining eggs. These hatched in September 1927, but the young larvae failed to respond to forcing treatment - presumably because of hatching so late in the season - and most of them died. The remainder were put down in the garden with no better result.

O. M. WHITE.

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COLLECTING RECORDS ON MIGRANTS

From five years' experience of collecting observations made in the British Isles of Lepidoptera known to migrate, it has been found that less than one tenth of the cards sent in refer to actual movements of a migrational character, i.e. with the direction of flight definitely recorded. The remainder merely record the presence of the species being watched, from which, at the best, the date of arrival or the abundance with which they breed, may be inferred.

In order to reduce the number of such cards, it should be noted that for Class (B) insects, which are common residents reinforced by migration, only definite records of movements in flocks or persistently in one direction are required on cards, but for the scarce vagrants in Class (C) cards are required whenever specimens in any stage are seen in the wild.

As regards the regular immigrants, Class (A), of which there are only nine species, complete records are now asked for. To facilitate these, a new schedule form has been circulated; on this are to be entered the approximate numbers of both the regular immigrants and the "control" insects - Aglais urticae (Small Tortoiseshell) and Nymphalis io (Peacock), both also occasional migrants - seen on sunny days which would be suitable for observation of the regular migrants if present. The absence of an entry can then be interpreted that the species was looked for but apparently absent on the date in question. On the other hand, when the observer himself does not observe, it is well to indicate the period during which the observer and not the weather is responsible for the lack of entries. Again, any species that is not looked for - such as, perhaps, Nomophila noctuella Schiff. - should be crossed out of the heading. It is possible, even probable, that on consecutive days the same individuals may be entered twice or oftener in a schedule kept daily. In such cases, when insects are recognised by peculiarities in the markings, a dagger or other symbol placed against the estimated numbers will indicate that some are stationary and not migrating through the place of observation.

Observers are also asked to enter on standard record cards full particulars of the named species on the first and last dates observed as well as the date, and numbers present, when at a maximum for each brood.

Will members please send prompty to the Hon. Secretary, Insect Immigration Committee, "Windycroft", Hastings, the cards filled in for first appearances and send the remainder with the completed schedule, if kept, to the County Recorder to enable him to guage the relative abundance during the year before sending them in. The names and addresses of present County Recorders will be supplied on request, and the summary of the year's observations will be printed in the "Entomologist" and circulated to observers who send in schedules, but it will not be possible to acknowledge separate cards sent in. Particulars of the weather conditions asked for on the record cards are not necessary for entries on the schedules, as the general weather charts can be consulted for analysis; but as some insects become lethargic or perish during inclement weather it is desirable to note the shade temperature at the time of observation when below 50°F with insects seen in flight, or to note "hibernating" if seen resting in shelter in cold weather. As it is normal for the Small Tortoiseshell and Peacock to hibernate indoors, observations of the "control" insects are only required when seen on the wing in wild condition, but any of the regular immigrants seen hibernating should be recorded on cards with notes on the back as to the sex and place found in: e.g. a Red Admiral hibernated in Flamborough Church occasionally feeding at the altar flowers: several Painted Ladies came out to feed on heath in bloom in the February snows at Glengarri (Co.Cork) in 1937 but their hibernating place could not be found.

To give an idea of the early 1938 records already in hand a short list is appended, observing that the Painted Lady generally appears challenging on hill top positions and the Peacock in woods perhaps a fortnight before they go to garden flowers, though other species may go to flowers direct upon arrival from overseas after a shortrest upon the beaches.

1938 Observations reported up to Easter:-

Vanessa cardui: Penzance March 3rd, Plym Bridge 11th, [illegible] 14th, Bognor Regis 26th, Start (2 flying north) 26th, Caermarthen 28th, Truro April 3rd, Lymington 3rd.

Vanessa atalanta: Petersfield Dec.22, Bournemouth hibernating end of January, Ashburton March 5th, Hastings 10th, Grantham 11th, Peel (I. of Man) 14th, Swindon 20th, Brighton (2 flying north) 21st, Tring 23rd, Haslemere 23rd, Eastbourne 24th, Essex 29th, Bredon Hill eight on 31st, Stroud (Glos.) April 10th (marked R 742).

Colias croceus: None in British Isles yet, but several seen at St. Tropez in S.E.France March 16th to 19th and 1 fresh female at Monguerre in Basses Pyrenees on April 1st.

Macroglossum stellatarum: Plymouth March 7th, Eastbourne 22nd and April 3rd.

Plusia gamma: Three came in from sea and rested on lantern at Start Lighthouse, Devon, at 9.30 p.m. on March 23rd (six weeks before average date for immigrants). At Bayonne, S.W.France, a fresh specimen was taken in a light trap on March 7th and a few seen there since.

Aglais urticae and Nymphalis io: appeared in many places on sunny days after March 2nd, sparingly in most places, but 40 A. urticae at Ecclesbourne (Hastings) about March 16th and 13 N. io at Truro on April 3rd. N.io is rare in the North, but in 1937 was recorded in several placed in Renfrewshire where it may become established again. Where N.io is absent A. urticae can be used as a "control".

CAPT. T. DANNREUTHER, R.N., F.R.E.S.

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OBSERVATIONS.

A small larva of Boarmia repandata (Mottled Beauty) found on honeysuckle at the end of March on Wimbledon Common, Surrey, was accidentally left in a pill box containing a dying male Emperor moth. A week later I discovered it quite healthy, it having eaten round holes in the wings of the moth. Three weeks later at the time of writing (April 12th) it is noticeably growing, having changed from grey to red-brown on its unusual diet, certainly much dryer that the juicy young leaves on which it was found. Besides the wings, it has completely devoured the strongly pectinated antennae of the moth. It would be interesting to hear of other unusual diets noticed in the rearing of larvae. (A parasite emerged from the above larva on April 20th). B. A. C.

In view of the Red Admiral controversy in the Bulletin, it may be worth recording that this afternoon (March 31st) at Bredon Hill, Worcestershire, I saw a number of specimens of V.atalanta flying with N.io and A.urticae in the glades at the edge of a small birch plantation. This is situated in a very exposed place on a small plateau at the top of the hill, 500 high. South says that "odd specimens are sometimes seen in the spring, but the species is rarely seen until late May or June". Allowing for the fact that I must have seen the same one several times, I should estimate that there were eight or ten of then. I took one to make doubly sure, or rather to confound doubters! The mild winter such as we have just experienced, together with the exceptionally sunny spring, should have been most favourable for hibernators. Were they hibernators or early immigrants? John Moore.

D.H.Sterling sends us a note of the Clouded Yellow (Colias croceus) at Rustington, Sussex, in November last year. On the 2nd he saw a yellow butterfly, which may, however, have been the Brimstone (G.rhamni). The following day, which was sunny, he took a perfect female croceus (possibly two or three days old) and later a slightly damaged male. The 4th was dull, but he disturbed a freshly emerged female from some long grass on that day.

The following note is contributed by the Rev. F.Goodwin Britton:- My wife and I have just returned from the South, and you may be interested to hear that we worked a light in the New Forest between Brockenhurst and Lyndhurst for a few nights and got evidence in our captures of an early season. The Early Thorn (Selenia bilunaria), The Engrailed (Tephrosia bistortata) and other common species were plentiful on the sheet from the first night which was March 22nd. More interesting captures were as follows: Oak Beauty (Pachys strataria), males plentiful; Small Brindled Beauty (Apocheima hispidaria)(5); Frosted Green (Polyploca ridens) (10); The Streamer (Anticlea nigrofasciaria) (10); Purple Thorn (Selenia tetralunaria) (5); Marbled Pug (Eupithecia irriguata) (14) between April 1st and April 6th which was our last night; Great Prominent (Notodonta trepida) (3) on April 2nd; one specimen each of Lunar Marbled Brown (Drymonia chaonia), and Nut Tree Tussock (Demas coryli) on April 5th; We reached home on the 8th to find a further specimen of chaonia and also the Lunar Thorn (Selene lunaria)out in the breeding cages. Our first dates for butterflies were - New Forest April 6th, Speckled Wood & Holly Blue; Gloucestershire April 7th, Orange Tip.

QUERIES

No. 56 Is there any general tendency in hirtaria and strataria to produce cripples in captivity? Almost all the specimens of these species emerging from my pupae this year have been to a quarter or lesser degree crippled, although other pupae in the same boxes and treated in the same way have produced sound moths. Perhaps these two species need to be kept very damp at the time of emergence.

JOHN MOORE.

No. 57 Is it unusual to find a glow-worm in March? I found one at Bushley, Worcs. on March 30th this year.

JOHN MOORE.

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REPLIES TO QUERIES.

No. 43 Black Pins - When these wre first introduced many years ago they were carefully made and enamelled, and had good points and did not bend. Later on to save cost the makers blacked the pins by a process that destroyed the temper and the point of the pin. As they are now sold they bend very easily and the point is bad; the enamel comes off and congeals in the body of the insect, making it very difficult to withdraw the pin if it is desired to re-set and re-pin an insect. Bent black pins are quite common, and the points are always bad.

White Pins - There has not apparently been any change for the worse in the manufactuer. They are firm and do not bend, and the points are permanent and good; they do not congeal in the body of the insect, and it is always quite easy to withdraw a pin even if it has been in the body for over 70 years. They certainly discolour, but this is not important. I consider also that they look less clumsy than black pins. As a matter of fact, the only reason why black pins are used seems to be the desire for uniformity on the part of collectors, as they had a great vogue when first introduced. Whilst perfectly easy to re-set an insect from a white to a black pin, it is a risky matter to change from black to white, although it can be done by giving the pin a twist with the forceps before removal and cleaning off the accumulated fat and verdigris to assist removal.

Setting Boards - I prefer to use oval boards rather than flat ones because on the former insects look more natural and retain their shapes better. Insects killed by cyanide of potassium or laurel always seem to have a tendency to spring upwards; consequently, insects set on flat boards do not remain flat for long, but become slightly concave. The use of the rounded board prevents this, as there is an allowance for springing. Personally I always kill by first using chloroform and then injecting oxalic acid; the process is very simple and can be done in the field. As a result, the insect is well relaxed for setting, quickly dries and is always free from mites. A properly saturated solution of acid should be used. With over 40 years' experience I have never had a mite in my drawers.

S. G. CASTLE RUSSELL.

No. 48 "The Insect Hunter's Companion" 1880 gives on p.81 a recipe for painting the essentials of which are as follows:- Dissolve 1 drachma of isinglass in half a pint of boiling water, allow to stand till cold, remove the clear jelly, warm and stir in well powdered "zinc white" (oxide of zinc) with another half pint of water till you have a thick cream, add a tiny pinch of ultramarine blue (this gives a more brilliant white) and 2 grains powdered white arsenic (anti-mite). About $\frac{1}{4}$ to $\frac{1}{2}$ lb. of zinc white is required. Warm the drawer or store box in front of the fire and apply paint while both are warm. Turn down to dry 24 hours. I shall be pleased to lend the book.

DR. J. V. BULL (160).

I have used for years a solution of ordinary white distemper, and find it very satisfactory. I do not, however, use paper. I prefer cotton, unbleache which is pasted over the cork with ordinary flour paste, and then left to stick, smoothing out allwrinkles. When dry give the cotton a coat or two of white distemper laid on very thick, like thick cream or paint, and you get a beautiful white background which keeps for years. But be sure you use unbleached cotton. The ordinary bleached cotton has had chemical treatment and it shows up through distemper. It is more expensive than using paper, but it lasts for ages. I think you would also get good results on paper if you got a suitable quality. The distemper also keeps down mites. I use it not only in drawers but in pictures on the wall, and they have had no attention, beyond renewing the camphor in the small apertures for the purpose, for a long time. Drawers or boxes should be absolutely air-tight.

A. [illegible] (No.59)

I do not know whether this method would be effective when applied over freshly papered store boxes, but the following is useful for reconditioning store boxes without re-papering:-

Mix powdered zinc oxide to a paste with a little milk, add a trace of lamp black (to increase the whiteness). A little powdered camphor or naphthalene may be added to keep away undesirable tenants. The solution is brushed lightly over the surface and allowed to dry thoroughly.

This will fill all pin holes and covering grease spots in such a way that they will NOT soak through. I should think that this would be fairly effective over fresh paper, but perhaps some bleaching solution might be as good.

A. HORDER. (No.85)

A very good solution for whitening store boxes is as follows:- Precipitated chalk and a small quantity of gum arabic. Dissolve in boiling water and carefully lay on, not too thickly, with a small brush. Paste on the paper is a never failing supple of food for mites, and the chalk is an excellent corrective.

F. E. BRIDEN.

Dilute ordinary "Stickphast" to 2 or 3 times its volume with water, then add zinc oxide (precipitated powder) till milky. Give 2 or 3 coats of the thin liquid, and rub down lightly with fine sandpaper when the last coat is dry.

Another suggestion is to whitewash the box or drawer with "ceilingite", which is said to disinfect against mildew. I have not tried either of the above myself.

B. A. C.

No. 55 Small quantities of dug pupae may be kept separate by storing them in trays. These trays are simply squares of wood half an inch thick, with strips of paper one inch wide pinned round them. The data can be written on the outside. I fit mine into large breeding cages all ready for emerging and let them take care of themselves. When I think of it I sprinkle them with water, but I have kept quite a number of species all through the winter in a very warm room without sprinkling, and obtained very good results.

N. A. B. COLLYER.

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WANTS & EXCHANGES.

P.Walder (102) has for exchange larvae of potatoria (Drinker) and munda (Twin-spot Quaker). Also set specimens of machaon (Swallowtail), asteris (Starwort Shark) and a few immorata (Lewes Wave). He wants larvae of miniosa (Blossom Underwing), lutulenta (Deep Brown Dart), fissipuncta (Dingy Shears), cervinata (Mallow), salicis (White Satin) and gonostigma (Scarce Vapourer).

D.T.Lees-Smith (110) would like to hear from any boys who might like to receive butterflies from him during the year when he is in Switzerland. He also wishes to receive specimens of P.astrarche var. salmacis (Castle Eden Argus) and var. artaxerxes (Scotch Brown Argus).

B.A.Cooper (19) has for exchange larvae of Waved Umber (Hemerophila abruptaria) from London. Wanted ova or larvae of this species from other, especially rural districts, or other larvae.

Does any member know of anyone qualified and willing to assist Dr. C. B. Williams at Rothamsted Experimental Station, unpaid, with analysis work connection with the migration investigation? If so, will he please write to Dr. Williams, Rothamsted Experimental Station, Harpenden, Herts.

Offered:- Ova of Puss, Privet, Elephant and Eyed Hawk Moths in June. Larvae ditto in July, and many others in exchange for many species of ova or larvae, British or foreign. T. H. Fox (105).

For exchange:- larvae of E.chrysorrhoea (Brown Tail). Wanted:- larvae of P.brassicae (Large White). E.W.Classey (41).

D. Tozer (36) wishes to exchange beetles with any coleopterist and also for lepidoptera. He requires specimens of athalia (Heath Fritillary), cinxia (Glanville Fritillary) and aurinia (Marsh Fritillary), in exchange for which he would obtain other local species.

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MEMBERSHIP CHANGES.

Newcomers:-

No. 155	S.W.Bailey, Badulla, Horsell, Surrey.	(Ants, Bees, Wasps and general entomology)
156	Olivia Harvey, Port William, Novia Scotia.	(Lepidoptera)
157	L.B.Clarke, Turkey Hall, Eldersfield, Glos.	(Lepidoptera)
158	Nellie Bartle, 25, Oaks Road, Soothill, Batley, Yorks.	(Lepidoptera)
159	C. King Smith, Bitton Hill, Bitton, near Bristol.	(Lepidoptera)
160	Dr. G. V. Bull, White Gables, Sandhurst, Kent.	(Lepidoptera)
161	J. W. Aldrich, 92, Beaconsfield Road, Brighton 6, Sussex	(Lepidoptera, especially butterflies)
162M	Marian Harry, 8, Baskerville Road, London, S.W.18.	(Lepidoptera)
163M	R. M. Grant, 31, High Street, Sheerness, Kent.	(Lep., General Entomolog
164	G. H. Hill, 52, Love Lane, Pinner, Middx.	(Lepidoptera, Coleoptera).

Resigned: No. 57.

Name removed for non-payment: Nos.5, 13, 35, 55, 61, 62, 66, 92, 100.

PRESENT TOTAL: 137.

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CALENDAR.

May Lepidoptera - Continuing our list of imagines emerging during the month, we come to the busy season of the year. Space will not allow more than a mere catalogue if to be in any way complete.

We now meet D.tiliae (Lime); S.populi (Poplar); S.ocellatus (Eyed); M.porcellus (Small Elephant); C.bicuspis (Alder Kitten); D.vinula (Puss); S.fagi (Lobster); L.bicoloria (White Prominent); P.octogessima (Figure of Eighty); L.quercus callunae (Northern Eggar); C.glaucata (Chinese Character); N.confusalis (Least Black Arches); E.chlorana (Green Pea); S.urticae (Water Ermine); P.fuligin (Ruby Tiger); A.villica (Cream Spot Tiger); H.jacobaeae (Cinnabar); A.rubricollis (Red Necked Footman); L.sorsorcula (Orange Footman); D.coryli (Nut Tree Tussock); A.leporina (Miller); A.megacephala (Poplar Grey); A.alni (Alder); A.psi (Grey Dagger); A.cinerea (Light Feathered Rustic); A.puta (Shuttle Shaped Dart); A.exclamationis (Heart and Dart); N.c-nigrum (Setaceous Hebrew Character); N.plecta (Flame Shoulder); M.albicolon (White Colon); H.genistae (Light Brocade);

M.trifolii (Nutmeg); M.glauca (Glauccus Shears); M.dentina (Shears); D.capsincola (Lychnis); D.cucubali (Tawny Shears); P.leucophaea (Feathered Ear); H.rectilinea (Saxon); A.basilinea (Rustic Shoulder Knot); M.fasciuncula (Middle-Barred Minor); D.scabriuscula (Bird's Wing); P.meticulosa (Angle Shades); H.palustris (Marsh); C.umbratica (Shark); C.chamomillae (Chamomile Shark); A.cordigera (Small Dark Yellow Underwing); A.melanopa (Broad Bordered White Underwing); A.luctuosa (Four Spotted); H.uncula (Silver Hook); M.venustula (Rosy Marbled); P.viridaria (Small Purple Barred); E.mi (Mother Shipton); E.glyphica (Burnet Companion); M.salicalia (Lesser Belle); P.barbalis (Common Fan Foot); A.trigeminata (Treble Brown Spot); A.ornata (Lace Border); A.remutaria (Cream Wave); O.plumbaria (Lead Belle); C.truncata (Common Marbled Carpet); A.viridaria (Green Carpet); X. tristata (Small Argent and Sable), E.hastata (Argent and Sable); P.albulata (Grass Rivulet); P.blandiata (Pretty Pinion); A.candidata (Small White Wave); E.assimilata (Currant Pug); C.coronata (V Pug); P.vitalbata (Small Waved Umber); A.sylvata (Clouded Magpie); E.dolabraria (Scorched Wing); O.luteolata ((Brimstone); C.advenaria (Little Thorn); V.maculata (Speckled Yellow); P.betularia (Peppered); L.petraria (Brown Silver Line); S.lineata (Black Veined); A.ochrearia (Yellow Belle); Z.trifolii (5-Spot Burnet); I.statices (Forester); H.lupulina (Common Swift); P.machaon (Swallowtail); V.cardui (Painted Lady); V.atalanta (Red Admiral); M.cinxia (Glanville Fritillary); M.aurinia (Marsh Fritillary); C.rubi (Green Hairstreak); A.agestis (Brown Argus); P.icarus (Common Blue); C.minimus (Small Blue); C.palaemon (Chequered Skipper).

B. A. C.

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THE ATTRACTION OF THOLERA POPULARIS (FEATHERED GOTHIC) TO LIGHT.

According to Richard South (p.255 "The Moths of the British Isles", Series 1) the male of this species is strongly attracted by light, but the female does not visit light. When on holiday at Ambleside in August last, I took a perfect female of this species as it sat on a wall in the rays of a street lamp, which was supported by a bracket on the wall.

No doubt in most cases of the attraction of insects to light, the males are the most frequent visitors, but it would appear that light has at least some attraction for the females also.

H. F. [illegible] (64).

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FROM OUR POSTBAG.

Reading about potato growers finding Death's Head pupae reminds me of a chance I missed of getting one. My father and I stayed at Deal one summer, and we took with us a privet hawk caterpillar that was rather late pupating. We kept him in the dining room of our digs and fed him on privet. We called him Gus from his Latin name and grew very fond of him. The landlady and other lodgers were much interested, especially when Gus pupated. During our stay there we talked to some potato diggers and described the Death's Head pupa to them. They knew it well - called it the "potato dog". Dad gave them our landlady's address and said that she would give anyone a shilling who took a"potato dog"there. We arranged with her to send them on. Nothing happened; but about two years afterwards she was in London and came to see us. She then said that a man had actually brought somethihg and she had paid him the shilling, but when she looked at what he had brought, she saw that it was exactly the same as the one we had had at the digs, so she had just thrown it away because she knew we wouldn't want another one the same! Of course, one hawk pupa would look like any other hawk pupa to the uninitiated; but was I furious!

MARIAN HARRY.

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ERRATUM. Through our typist's error two queries in last month's issue of the Bulletin have the same number. Will members please alter the one on page 30 at the conclusion of Mr. Moore's article to No.55a.

THE
ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF
THE AMATEUR ENTOMOLOGISTS' SOCIETY

PRESENTED
15 JUL 1938

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DEPARTMENT OF ENTOMOLOGY

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The Hon. Secretaries will be pleased to forward a specimen copy of the Society's Journal and a prospectus to any non-member likely to be interested, on receipt of name and address. They will also gladly send prospectuses to those members who may be able to make use of them.

With [illegible] please remember that [illegible] can only be given other than through the Bulletin if they enclose a stamp for return postage. If contributore desire the return of their mss after publication, would they please mention this when writing, and also enclose the required postage stamp. We are able to reproduce SIMPLE drawings and diagrams if authors send us a facsimile drawn in Indian ink the exact size they wish the reproduction (which must not exceed 7 ins. in width or 11 ins. in length) to appear.

The Exchange Column is free to all members, and the Editors hope that full use will be made of it. Those who have not been collecting for many years are advised to confine themselves to the exchange of [illegible] apparatus and live insects, leaving that of set, pinned [illegible] insects till they have had more experience. The Editors offer no guarantees for any goods offered in the Exchange Column, and they are in no way to be held responsible should the privilege allowed be abused. Unless members state to the contrary, exchange notices will be inserted in the Bulletin once only. For addresses, please refer to the membership list and subsequent membership changes list.

Anyone at present not recording migrant lepidoptera and dates each year of first noting the species mentioned on the phenological list, who would care to do so, should write to B.A.Cooper for free literature and information. Any further information on migration will be willingly given by Captain T. Dannreuther, Windycroft, Hastings, and on Phenological Recording by Major H.C.Gunton, Rathgar, Gerrards Cross, Bucks.

Books mentioned under the heading "Received" may be borrowed from B. A. Cooper, borrower paying postage both ways.

THE ENTOMOLOGISTS' BULLETIN

is published by the Society nine times per year. Although of interest to all amateur collectors, it is specially set out [illegible] inexperienced collector and student of entomology. Beginners are especially welcome. If not satisfied with the Bulletin, write to the Editor about it.

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THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol. 3. No. 27. June 1938.

We have to announce that our member N. A. B. COLLYER, 27 GUILDFORD WAY, WALLINGTON, SURREY, has offered to enter our "Advisory Panel"as adviser on books, apparatus, materials and design of home-made apparatus used in connection with Lepidoptera.

E. W. CLASSEY, 141, PORTNALL ROAD, LONDON, W.9, has also offered to act as "Adviser" in the identification of larvae of British Lepidoptera. It is usually quite impossible to name the species from a description of the larva alone, so enquirers are asked to send the specimen to his address (above); they will be returned in a day or two if return postage is enclosed.

The Society has now paid for its duplicating machine and the Treasurer reports that finances are still slightly better off than at this time last year. As we are spending more this year, we must still expect a further increase in membership if we are to be able to withstand the changeover to a printed Bulletin next year.

B. A. COOPER.
HON. EDITOR.

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HUNTING THE SWALLOWTAIL.

Our finest butterfly, the Swallowtail (Papilio machaon) is still to be found in a number of localities in Cambridgeshire and Norfolk, often plentifully.

The following are my experiences of the species during the first week of August 1933. Staying at Cromer I travelled by train to Wroxham and thence on the Stalham bus to Weyford Bridge. From here I rowed downstream to the junction of the River Ant and Stalham Dyke in which district the Swallowtail has its haunts. Landing on the dry marsh a short way upstream, I had scarcely waited five minutes before the first machaon came into view. However thereis a great difference between seeing and catching, as everyone who knows the species will realise. A light breeze was blowing across the marsh, and all the specimens seen were following the wind. The butterflies came over in batches, when there would be an exciting five minutes with several in sight at once, followed by a blank period of from fifteen to thirty minutes.

The insects appeared to fly in a large circle. One batch of Swallowtails, (easily recognised for one of them was a dark ochreous variety) passed three times at intervals of about an hour, always flying in the same approximate direction. Three times it passed, and each time I missed!

The insects seldom settle when flying in the sunshine, but from time to time a female will drop to a wild carrot plant, quickly deposit an egg, and be off again before one reaches the spot. The eggs are deposited singly on the food-plants, easily recognisable by their fernlike leaves, although two or three may occasionally be found on one plant, no doubt laid on different occasions.

The total "bag" for the day was two females, five males (all perfect), half a dozen eggs and about twenty young larvae, from which were subsequently obtained eighteen imagines. The larvae were fed exclusively on garden carrot, and had all pupated within a month. The larvae, I have reason to believe, are not cannibals, thus contrasting strangely with the caterpillar of the Orange Tip (Euchloe cardamines) which has similar habits (one individual per plant) and is a ferocious cannibal.

An emergency supply of food-plant may speedily be obtained by slicing the tops off ordinary shop carrots, and placing them ([illegible] these tops) in a saucer of water. In a short time they will send out a plentiful supply of new leaves.

T. DOUGLAS FEARNEHOUGH.

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NOTE ON RECORDING DRAGONFLIES.

Now that Miss Cynthia Longfield's book, "The Dragonflies of the British Isles" (F.Warne & Co., 1937, 7/6) is available for amateurs to recognise any of our 42 species taken in a net, the Insect Immigration Committee have included ten of them known to migrate occasionally for observation on the standard record cards issued for recording butterflies and moths.

Of the migrant Dragonflies Libellula quadrimaculata L. (Four Spotted Libellula) has been selected for phenological observation - first appearance is about May 15th - as it is common and widespread and a well known resident as well as an immigrant. On the other hand, there are three rare vagrants of which any record is of value, namely, Sympetrum vulgatum L. (Vagrant Sympetrum); Sympetrum flaveolum L. (Yellow-winged Sympetrum) and Sympetrum fonscolombii Selys (Red-veined Sympetrum).

The others are residents but have been observed coming in from overseas by light vessels, sometimes in large swarms, but records of them are only of use if several are seen making a persistent flight in a definite direction. Of these Aeshna cyanea Müller (Southern Aeshna) and Sympetrum striolatum striolatum Charp. (Common Sympetrum) are often very common in July. The others to be observed are also common in some years probably due to immigration, namely, Aeshna mixta Lat. (Scarce Aeshna) which is almost a regular August immigrant in Hants-Dorset; Aeshna grandis L. (Brown Aeshna); Libellula depressa L. (Broad-bodied Libellula) known to migrate in swarms in May; and Sympetrum sanguineum Müller (Ruddy Sympetrum) rather rarer but breeds regularly in Sussex.

(Capt.) T. DANNREUTHER.

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POLYGONIA C-ALBUM (THE COMMA BUTTERFLY)

Fewer members sent in notes of this species than might have been expected, but the results are summarised below. It appears that the insects is still scarce enough for a number of people who have been collecting for several years to have never met it. During 1937 the butterfly seems to have become commoner in the Western Counties and in East Anglia, and to have increased its range somewhat in Norfolk and Suffolk. Most records show, however, that in common with many other butterflies and due no doubt to the prevailing weather conditions, it was rarer in 1937 than in the preceding few years, a temporary fluctuation which should make no difference to its subsequent range. Several correspondents note the butterfly as having been seen on the wing this year in early Marsh, so it is hoped that the April cold spells will not cause a further scarcity later in the season.

We have no records of its occurrence in Scot_land, Northern England, Ireland or South Wales. In the latter area, however, it has been common and even abundant for a number of years past. In central West Wales J.P.Robson notes having seen or taken six specimens in the Aberystwith district, August 1937, while I took a specimen newly emerged near Penmaenpool, Barmouth, Merioneth, 16-8-34. D. Tozer states that it appeared in Leicestershire about 1930, but it is still rare. In Northants and Hunts. it is rather common - he took a larva in the former last year. From Beds. W.J.D.Eberlie tells us that it was not so common in 1937 as in the two previous years, when it was common near all woods. In Norfolk, Major F.H.W. Ross-Lewin took one at St. Olaves, near Yarmouth 25-9-1937, while according to Mrs. J.G.Scott it appeared last year in N., W. and E. Norfolk, at the end of September and the beginning of October, her most easterly record being from Acle, 9 miles W. of Great Yarmouth. H.E.Chipperfield notes one from Dovercourt, Essex, 10-10-1937, another believed to have been taken near Ipswich, Suffolk; no others seen during preceding seven years. As mentioned before (page 22), P.K.Venner at Gosfield, Essex, swa one specimen in 1935, seven or eight in 1936 and large numbers in the autumn of last year. In Herts. B.A.Cooper has found the species fairly common since 1933, and especially so in 1934, when it was to be found often in numbers in woodland glades and outskirts in many places, but was very scarce last year. J.E.Knight notes it (29-3-1937) from Stansted on the Essex border. He and others note it locally since 1933 in Bucks. London (see p.22) and Surrey (see p.100 of Vol.2, and p. 22), E.L.Bean and G. Betwright also commenting on its scarcity during the past two years. Dr. G.V. Bull at Sandhurst, Kent, states that it used to be in the neighbourhood twenty or thirty years ago. He saw it first in the district 30-4-1931, since when it has become commoner but not abundant; he thinks spraying of the hop, an alternative foodplant, may have kept it in check. D.O.Dyles saw none at Elham, Kent, in 1933, eight in 1934, common '35-6, fairly so in 1937 when he took it on rotten plums, Buddleia and Michaelmas Daisy. W.E.Dale notes the Comma as generally common in Sussex and Kent of last years; it was very numerous round Bexley, Kent, in the late summer of 1936, but, as with most butterflies, very scarce in 1937. He has bred for release, but doubts whether this has affected the butterfly's abundance in any way. Prior to 1933, R.C.Dyson had only seen one specimen in Sussex, that being in 1929. In 1934-6 it was fairly common in the Brighton district, and he also saw several in mid-Sussex; in 1937 very few were seen, in marked contrast to the previous year (also commented on by J.V.Banner). G.Burt in S.Dorset notes it as not common in 1937 but widely distributed, being considerably scarcer than in previous years. T.Norman describes the insect as fairly commin in '35 in N.W. Dorset, very common in 1936 but generally scarcer last year, as it was also in Berks. and Hants. C.W.Baker gives it as common in the latter county in 1935-6, but he saw none in 1937. At Lavington, Wilts. (see J.21 p.100) H.G.Morgan notes it as rare in 1933, common 1934-5, only one specimen being noted in 1936 and two in May 1937, possibly the same insect. A.Herder at Salisbury, Wilts., took it first in 1933, common '34-5, abundant 1936 (perhaps not looked for at Lavington that year), but in the spring of 1937 he saw only one, none in July and a few in the autumn on sugared posts. G.H.W.Cruttwell saw the first at Frome, Som., in 1927, since when it has become more common every year, being often abundant in spring in a wooded valley about a mile from the town, in the autumn numbers being seen in Frome gardens; it became scarce last year. In Oct.1936 he took a dull coppery var. at night on ivy blossom. In Devon, at Dartmouth, D.O.Dykes found it common in 1936 but fairly rare in '37. J.V.Banner took a few newly emerged at Hall Sands in Sept. 1937. J.Walker (p. 18) suggests that the butterfly is getting commoner in Devon, he having seen ten in a wood at Newton Abbey on July 24th last year and others in Torquay.

B. A. C.

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NOTES ON FOOD-PLANTS - THE ELM.

The elm is a very useful tree to have in the garden from the point of view of a breeder of Lepidoptera, as the larvae of many moths and some butterflies feed on the foliage.

Plants of the English elm can be obtained by removing suckers, or off-growths from the roots, of old plants and planting in October. One can usually find spinneys by the side of roads where this elm will be found flourishing and throwing up numerous suckers, as they are termed horticulturally. This elm is not too particular as regards soil, although good farmland is often judged by the quantity of English elms growing thereon. A good garden soil of a loamy nature should be quite suitable.

It will be observed that the majority of the larvae feeding on elm are large eaters, consequently a big stock of young plants will be required to provide a ready supply of foliage, and only those with a large garden can hope to provide sufficient stock unless they possess a large tree. The following species of elms will provide an alternative to the English elm (*Ulmus campestris*) and are commonly used for town and garden planting:- Cornish elm (*Ulmus glabra cornubiensis*), Wych elm (*Ulmus glabra*), Scotch elm (*Ulmus montana*) and the Huntingdon or Chichester elm (*Ulmus montana vegeta*). I have noticed a preference for the latter by some species of larvae, particularly Buff-Tip (*Phalera bucephala*)

To obtain plants of these latter species it will be necessary to purchase young trees from a nurseryman. They will form very ornamental trees if planted as specimens on a spacious lawn. The trees can be planted at any time between November and March. It is advisable to stake and securely tie the tree at the time of planting, protecting the stem from the twine by means of strips of canvas bound round the trunk. The ties round the stem must not be too tight or the flow of sap will be arrested.

And now for a word of warning; the elm is attacked by a very serious fungus disease known as the "Dutch Elm Disease", and is causing grave concern in this country, on the continent and in America. The mycelium of the fungus penetrates through the tissues of the tree, stopping the translocation of sap, and causing shoots, boughs and often the whole tree to die. It is remarkable in what a short space of time a large tree can be killed.

The disease is carried about by means of the Elm Bark Beetle, the fruiting spores of the fungus being formed in the galleries of the beetle. Although the beetle usually chooses large trees with thick bark as a host, small trees are also attacked; I know several dozen trees that have been killed during the last two years, the ages of which ranged between ten and twenty years.

So fas as is known there is not a species of elm immune from attack so no help can be given in this direction, although I consider the Cornish elm less susceptible than the other species.

Should any tree show synptoms of the disease, that is shrivelling of all leaves on a branch or branches and a discolouration of the tissues in the form of a brownish ring in a horizontal section of the wood, all the infected parts should be removed and clean cuts made back to sound wood and the cuts painted with Stockholm tar, the affected parts being immediately burnt.

R. C. DYSON, N.D.H.

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HYMENOPTERA COLLECTING.

I am at last making a serious attempt to appease the demands of our editors with a short article on this subject. Unfortunately I have recently changed my address and am without both literature and collection. Consequently I have to make these notes very general, while hoping that if they are acceptable to the readers of the Bulletin I may submit some more detailed remarks later on.

Before going any further, I should like to make it quite clear that in referring to the Hymenoptera Aculeata" I intend to imply the Aculeata less the Ants. I have no experience of this section, but for convenience I shall speak of the rest of the group as the "Aculeata".

I might possibly do well to give a few reasons why I was induced to take up collecting the Aculeates. I think that the chief of these was that by comparison with such orders as the Lepidoptera and Coleoptera, the group Hymenoptera is so little worked. Yet it has been well enough studied for anyone to find a fair selection of reliable literature. Another reason was that specimens do not take up a lot of expensive cabinet space and require very little setting. Boards need only very rarely be used. Lastly, the habits of the various families (and even of different species in the same genus) are very varied, and there is ample scope for the investigation of the life histories of all our Aculeates.

Some genera are social (Bombus, Humble Bees, and Vespa, Social Wasps) while others are solitary. Of the latter, many make isolated nests, while others group their nests in dense colonies. Many Aculeates are predacious, and a study of their prey - though difficult - is very interesting. Others are iniquilines and parasites.

Collecting:- Perhaps one of the greatest difficulties to be faced with in collecting is the fact that nearly all effective work is confined to reasonably warm and sunny weather, and even in the middle of thesummer conditions are never good in the later afternoon. Still, a sunny week-end will often yield a "bag" that will keep every evening in the following week well occupied.

As soon as warm weather sets in after March activity on the part of the early bees may be expected. The hibernated queen Wasps and Humble Bees will be at work. The early Andrenas and Halicti willbe found on Dandelion and Sallow flowers - both very popular with the early species of these genera. Many species are particularly attached to certain flowers, while others are less exclusive in their tastes.

With regard to collecting methods and material, I can only give notes on those which I have from experience found most useful, leaving others to modify them according to their individual tastes and conveniences.

For field work I always carry a roomy satchel with two compartments, one for empty boxes and the other for full ones. It is advisable to bring home Aculeates alive. The pollen-bearing females are then able to free themselves of their loads before being killed and pinned. If they are not allowed to do this it will be found that many of the important specific characters - the colours of the hairs, sculpture of the chitin etc - are obscured. Also the pollen is very apt to go mouldy in the collection.

very apt to go mouldy in the collection. Personally, I do nearly all my collecting with 3" x 1" and 3" x $\frac{3}{4}$" glass tubes. They are cheaper than pill boxes though not quite so satisfactory. A small net - about 12" in diameter - is a necessity, though many specimens visiting flowers and nesting can be boxed direct with a little practice. The material for the net should, of course, be black and of the finest mesh obtainable, or else many of the smaller species will be lost. I also find a yellow "Chinagraph" pencil invaluable in the field. Brief notes may be written in the glass bottoms of the tubes or boxes with this type of pencil, and are easily rubbed off later when the specimens are removed from the boxes. Notes made on the cardboard tops of boxes or the corks of tubes with an ordinary pencil are a nuisance, as they are harder to erase and may easily be forgotten, causing confusion with later captures.

Killing:- Sulphur fumes are excellent for this purpose. Cyanide is convenient but unsuitable, as it has a bad habit of turning the yellow colours of specimens a reddish-brown if they are left in it for more than about five minutes. Apart from the damage it does to the appearance of the specimens, it may render identification impossible in the species of certain genera (i.e. Odynerus and Nomada) where the depth of colour of the yellow bands is of great importance. My own practice is to assemble the tubes (with the corks either loosened or replaced with muslin to admit fumes) in a series of large pickle jars. The lid of a small tin is provided for each jar, and is attached to a short loop of wire - to serve as a handle. A small heap of flowers of sulphur is put in this "spoon", ignited, and when well alight lowered into the jar on top of the collecting tubes. The lid is then put firmly on to the jar and the sulphur left to burn itself out. The specimens donnot stiffen and should remain relaxed for anything up to three or four days - provided the lid of the jar is not removed.

Pinning:- For all but the large species (i.e. Humble Bees and the Hornet) I use Kirby Beard's No.18 pins. I find it an advantage to snip off the head of the pin, which makes it easier to handle with forceps. The wings should be spread out - by gently pressing them downwards - the mandibles opened, and (if necessary) kept open by means of a tiny wedge of paper inserted between them. Then take a slip of paper about as long as the insect and as wide as its wing span. Write the date on it and push it up the pin until it touches the specimen. Spread out the legsand antennae on the paper, which will also prevent the abdomen curling or drooping downwards. The specimens should be kept on this support till set, or they can be left indefinitely before they are put in the final mount. For this purpose I use slips of stout white card (6- or 8-ply Bristol board is ideal) cut into a series of lengths from $\frac{1}{2}$" to 1" long, to suit all sizes of specimens. The card slips are pierced with a setting needle so that there is a large hole at one end and a small one at the other. A large pin (No.4) is pushed through the large hole, so that the card is carried about $\frac{1}{4}$" from the top of the pin. The pin bearing the specimen (No.18) is inserted in the small hole at the other end of the card. Some practice is necessary in piercing the holes to get them the right size. Otherwise the pins will be too loose or will bend when pressed through the holes. When correctly mounted by this method the specimens are very neat in appearance. They are also well off the cork of the cabinet and easy to handle. It is advisable to extract the genitalia from males and mount them on a slip of stout paper which can be mounted on the large pin, together with the data label. The genitalia can be easily removed from the specimens while they are still soft with a setting needle, and if reasonable care is used the appearance of the specimen will not be affected. In some species it is essential to study the genitalia to identify them, while in many others they are useful to confirm determinations made from superficial characters. Aculeates should never be gummed on to cards. This practice will, in the majority of cases, render identification impossible, as a good view of the ventral surface of the specimen is essential.

Literature:- I should have liked to give some notes on papers useful in identifying the different genera, but am prevented by the fact that I have none of my books with me at the present moment, and cannot rely entirely on my memory for the many different references. Possibly some notes on this subject might be acceptable at a later date. Meanwhile, I should advise anyone who contemplates making a serious study of this group to obtain Saunder's "Hymenoptera Aculeata." Edward Step's little book, "Ants, Bees and Wasps", in the Wayside and Woodland series should be read as an introduction to the subject. It is, however, of little value for the identification of specimens. The author has had to omit so many species to bring the work down to its small size that its scope is far or small for serious study. Also its illustrations of species are toonnear life size to be of any use (except in the case of the Humble Bees and the Hornets, which are all of large size). His notes and illustrations of the life histories etc., are, on the other hand, excellent. Personally, I advise anyone who can to borrow a copy and read, but to save its price for other works likely to be of more lasting value. Saunders' book is almost essential. It can be used with fair certainty for the determination of all genera. Being somewhat out of date it has to be supplemented with later papers for the identification of the species of many genera. I hope to mention some of these papers in a later note.

A good deal of practice is necessary for the identification of specimens, to recognise the characters used in the keys, and a really good lens is required for this. A binocular microscope is, of course, ideal, as many characters are very minute

I hope I have not made the difficulties attached to the study of the Aculeata sound too great. I can assure any prospective students of this group that they are more than balanced by the interesting nature of the work. Possibly the Hymenoptera are less showy than the Lepidoptera, but in their own way many species will be found under the lens to be very beautiful. The metallic colours of the Chrysids ("Ruby-tailed Wasps") and the browns and yellows of some Nomadas are most striking, to mention only two examples.

D. O. BOYD.

NOTES ON THE PEPPERED MOTH (P.BETULARIA)

(Compiled from Questionnaire forms).

Most members hve not mentioned anything about the relative sizes of betularia and doubledayaria, but nevertheless the following notes of distribution may be of interest. If anyone has long series of caught specimens of the moths from the same locality, we should be glad to hear the result.

In Scotland the only record we have is from D.A.B.Macnicol, who bred three of the dark form in 1937, and caught another in 1936. One light one was taken wild in 1937. From Killin, Perthshire, and Arisaig, Invernesshire, both moths taken and larvae bred were the light form; relative sizes of light and dark mugh the same. J.P.Robson took the black form at Barnard Castle, Durham in 1937. D.Tozer states that the black form is dominant in Leicestershire, but the light form may also be obtained. In Herts and Middlesex B.A.Cooper finds the black form dominant, but he has too few to give any figures. Of six taken in N.W.10 (officially Middlesex) and N.W.3 (officially London) three were of each type. His series is too imperfect to be worth measuring, but to all appearances the sizes of each type are equal, but bred specimens are smaller than wild ones. J.E.Knight notes that two from N.12 (Middlesex) were dark, while five light and six dark were bred from oak and dogwood-feeding larvae from Prince's Risborough, Bucks. In the South of London, the dark form seems dominant, since S.C.Wincott notes only doubledayaria (several) at Lewisham, while G.Botwright says that on the black marshy ground round Croydon nearly all are of the black form, while E.L.Bean in the same district confirms this, saying that the speckled form is still found though much less commonly than the dark. C.H.Veale says that the dark form is usual at Bexley, Kent, but one light specimen was taken in 1937. W.E.Dale's catch of the species has averaged seven per year for four years, but in 1937 he took his first speckled specimen. J.V.Banner states that bred specimens from Surrey are nearly always black. Some dug up from the base of elms, which had possibly fed on willows nearby, were also black. Larvae off ash at Ranmore, Surrey, produced black imagines (B.A.C.). T.Norman notes a single black specimen at Newbury, Berks. A.Horder has only noted the light from Salisbury, Wilts., but H.G.Morgan gives it that the light form is dominant although the dark has been taken there. At Lavington, Wilts., he has only seen the light form. G.H.W.Cruttwell has taken no notice of the species but states, "The form generally obtained in Somerset is the intermediate (sic) whilst those caught in Dorset are almost always of the black form". J.E.Knight has taken one dark specimen in the New Forest. In Sussex, P.Walder states that both forms occur in the Brighton district and are of about the same size. Dr. J.V.Banner has taken only the light form at light, while R.C.Dyson has taken two or three specimens in the same town, all dark. Capt.Dannreuther notes a black specimen from Hastings which laid 100 eggs. Further notes would be of interest.

B. A. C.

QUERIES

No. 58 Insect ecology is a very complex subject about which it is not very easy to obtain information. I am wishing to collect data on the relationships among Lepidoptera of one species to another and to their foodplants and would be glad if anyone could supply observations or references in books and periodicals on the subject. Changes in the relative abundance of one species to another may be brought about by many circumstances, among which may be mentioned heath and forest fires, the felling of woodland, afforestation, coppicing, drought, growth or decay of towns, rotation of crops, floods and also by the shifting centres of distribution of certain foodplants. It is well known that after a heath fire, for example, many seedling plants not belonging to that heath association grow up, but after some years the original conditions prevail once more. Insect life likewise undergoes some such sequence of changes, slowly as a rule, but often very rapidly through the agency of man (not referring to the destructive nature of "over-collecting"). Changes in the status of foodplants would be a very useful corollary to any observations on the insects.

B. A. C.

No. 59 Very few, if any, textbooks give instructions on the pairing of caught or bred imagines. Some species I have found, mate almost as soon as their wings are dry; if one of the opposite sex is not forthcoming immediately it is often difficult, and even impossible, to get them to mate up, or, if they do, very few fertile eggs seem to be laid. I have reason to believe that many species that emerge during the night pair immediately they are dry; if, then, a selected male and female are placed together, it will not follow that all the eggs laid after that time will have resulted from the pair present at the time of laying. Since most breeders have not room to place each pupa in a separate breeding-cage, is there any way the above difficulty can be avoided. Some species seem to lay more eggs when placed in an outdoor sleeve, while for others the reverse is true. Some like a rough surface for ovipositing, others lay direct on to the foodplant or drop the eggs broadcast while on the wing. Species such as the Lackey or March moth probably lay more if supplied with sticks around which to lay their ova. If our breeders would send us notes on the best way to obtain pairings, the period of duration over which these would be expected to extend and perhaps suggestions for the different treatment of this species or group and that, they would be much appreciated.

B. A. C.

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REPLIES TO QUERIES.

No. 44 Whilst looking over some cocoons of the Emperor moth (Saturnia pavonia) I came across one with two or three holes in it. Taking it to have been parasitized I cut it open and inside found two pupae, or rather one pupa case and a dead pupa. Both were, however, males.

The cocoon appeared perfectly normal, except that it was slightly bigger, but this, I thought, was because the cocoon was of a female. Inside there was no division or sign of a division parting the two pupae, and the walls were as smooth as a normal one.

Underneath I found a number of larvae which were apparently eating the cocoon. Each appeared to have constructed a cell of sand. They are a dirty white, with a brown head, and slightly hairy. When touched, they draw themselves together. They appear to be lepidopterous larvae about ½" long. Can anyone suggest what they might be?

GEORGE BURT.

No. 53 I am afraid I cannot claim to be a "breeder of long experience", but I have a particularly vivid recollection of seeing a larva of Thecla quercus, L. eating one of Hylophila bicolorana (Scarce Green Silver Lines) when they were caged together. A fellow collector told me at the time that he had always found T. quercus (Purple Hairstreak) a very bad offender in this respect. I have also known the larvae of the Yellow-tail moth to eat other larvae, but I have no record of the species destroyed.

D. O. BOYD.

C. Donovan (Catalogue of the Macrolepidoptera of Ireland, 1936, p. 50) notes the larvae of Dianthoecia caesia (The Grey) as being marked cannibals under artificial conditions and needing to be strictly segregated. B. A. C.

CALENDAR

June Lepidoptera:- Owing to the length of this month's list, no comments can be added on the best mode of capture. Emerging during the month are:- S.ligustri (Privet); C.elpenor (Elephant); C.bifida (Poplar Kitten) C.furcula (Sallow Kit.); P.bucephala (Buff Tip); H.derasa (Buff Arches); T.batis (Peach Blossom); P.or (Poplar Lutestring); P.duplaris (Lesser Satin); P.fluctuosa (Satin Carpet); O.gonostigma (Scarce Vapourer); P.fascelina (Dark Tussock); P.similis (Yellow Tail); N.cuculatella (Short Cloaked); H.prasinana (Green SilverLines); P.plantaginis (Wood Tiger); D.Sani (Clouded Buff); C.dominula (Scarlet Tiger); C.cribrum (Speckled Footman); N.mundana (Muslin Footman); E.irrorella (Dew Moth); C.mesomella (4-dotted Footman); D.orion (Scarce Merveil-du-jour); A.aceris (Sycamore); A.strigosa (Marsh Dagger); A.tridens (Dark Dagger); A.menyanthidis (Light Knot Grass); A.rumicis (Knot Grass); C.ligustri (coronet); A.albovenosa (Powdered Wainscot); A.segetum (Turnip); A.corticea (Heart & Club); ALlunigera (Crescent Dart); A.ripae (Sand Dart); A.strigula (True Lover's Knot); A.hyperborea (Northern Dart); N.augur (Double Dart); N.triangulum (Double Square Spot); N.brunnea (Purple Clay); N.primulae (Ingrailed Clay); N.rubi (Small Square Spot); A.putris (Flame); T.pronuba (Large Yellow Underwing); T.fimbria (Bel. Und.); E.prasina (Green Arches); E.occulta (Great Brocade); A.tincta (Silvery Arches); A.advena (Pale Shining Brown); A.nebulosa (Grey Arches); B.brassicae (Cabbage); M.persicariae (Dot); M.oleracea (Bright-Line Brown-Eye); M.dissimilis (Dog's Tooth); M.thalassina (Pale Shouldered Brocade); M.contigua (Beautiful Brocade); M.pisi (Broom); D.luteago barretti (Barrett's Coronet); D.caesia (Grey); D.conspers (Marbled Coronet); D.albimacula (White Spot); D.cucubali (Campion); D.irregularis (Viper's Bugloss); H.chrysozona (Small Ranunculus); H.serena (Broad-barred White); N.reticulata (Bordered Gothic); E.adusta (Dark Brocade); C.exulis (Northern Arches); B.viminalis (Minor Shoulder Knot); T.atriplicis (Orache); H.oblonga (Crescent Striped); H.sordida (Large Nutmeg); A.obscura (Dusky Brocade); A.unanimis (Small Clouded Brindle); A.ophiogramma (Double Lobed); M.strigilis (Marbled Minor); P.captiuncula (Least Minor); X.rurea (Cloud-bordered Brindle); X.lithoxylea (Light Arches); X.sublustris (Reddish Light Arches); X.monoglypha (Dark Arches); X.hepatica (Clouded Brindle); E.lucipera (Small Angle Shades); N.typica (Gothic); H.leucostigma (Crescent); S.maritima (Silky Wainscot); T.extrema (Concolorous); T.bondii (Bond's Wains.); T.elymi (Lyme Grass); L.pallens (Common Wains.); L.favicolor (Mathew's Wains.); L.obsoleta (Obscure Wains.) L.littoralis (Shore Wains.); L.comma (Shoulder-striped Wains.); L.lithargyria (Clay); L.conigera (Brown Line Bright-Eye); L.furca (Double Line); M.trigrammica (Treble Lines); C.morpheus (Mottled Rustic); C.taraxaci (Rustic); C.quadripunctata ((Pale Mottled Willow); R.tenebrosa (Brown Rustic); D.oo (Heart); D.fissipuncta (Dingy Shears); C.lychnitis (Striped Lychnis); C.asteris (Starwort); C.gnaphalii (Cudweed); P.umbra (Bordered Sallow); H.dipsacea (Marbled Clover); H.maritima (Shoulder-striped Clover); L.fasciana (Marbled White Spot); E.argentula (Silver Barred); R.sericealis (Straw Dot); E.trabealis (Spotted Sulphur); P.moneta (Golden Plusia); P.chrysitis (Burnished Brass); P.bractea (Gold Spangle); P.festucae (Gold Spot); P.iota (Plain Golden Y); P.pulchrina (Beautiful Gol.Y); A.triplasia (Dark Spectacle); A.tripartita (Spectacle); T.pastinum (Blackneck); L.flexula (Beautful Hook Tip); P.fuliginaria (Waved Black); Z.tarsipennatis (Fan Foot); Z.grisealis (Small Fan foot); H.cribralis (Dotted Fan foot); H.derivalis (Clay Fan foot); B.fontis (Beautiful Snout); H.proboscidalis (Snout); H.costaestrigalis (Pinion Streaked Snout); P.pruinata (Grass Emerald); G.papilionaria (Large Emerald); E.pustalata (Blotched Emerald); E.smaragdaria (Essex Emerald); H.strigata (Common Emerald); H.muricata (Purple Bordered Gold); A.contiguaria (Weaver's Wave); A.interjectaria (Dwarf Cream W.); A.holosericeata (Silky W.); A.aversata (Riband W.); A.subsericeata (Satin W.); A.degeneraria (Portland Ribbon W.); A.bisetata (Small Fan-footed W.); A.dimidiata (Single Dotted W.); A.immutata (Lesser Cream W.); A.marginepunctata (Mullein W.); A.immorata (Lewes W.); A.rubiginata (Tawny W.); A.fumata (Smoky W.); A.ochrata (Bright W.) A.emarginata (Small Scallop); O.otrata (Chimney Sweeper); L.griseata (Grey Carpet); S.rhamnata (Dark Umber); C.fulvata (Barred Yellow); X.quadrifasciaria (Large Twin Spot Carpet); E.caesiata (Grey Mountain Carpet); E.galiata (Galium Carpet); X.unangulata (Sharp Angled Carpet); E.picata (Cloaked Carpet); M.albicell (Beautiful Carpet); M.ocellata (Purple Bar); M.procellata (Pretty Chalk Carpet); P.affinitata (Rivulet); P.alchemillata (Small Rivulet); P.taeniata (Barred Carpet); C.bilineata (Yellow Shell); A.cucullata (Royal Mantle); A.rubidata (Flame); E.obliterata (Dingy Shell); A.luteata (Small Yellow Wave); A.testaceata (Waved Carp

A.blomeri (Blomer's Rivulet); E.pimpinellata (Pimpinel Pug); E.distinctaria

(Thyme P.); E.expallidata (Bleached P.); E.absinthiata (Wormwood P.); E.goosensiata (Ling P.); E.trisignaria (Triple Spotted P.); E.extensaria (Scarce P.); S.scabiosata (Shaded P.); E.haworthiata (Haworth's P.); E.tenuiata (Slender P.): E.fraxinata (Ash P.); A.togata (Cloaked P.); C.rectangulata (Green P.); C.debiliata (Bilberry P.); C.sparsata (Dentated P.); P.tersata (Fern); A.grossulariata (Magpie); E.prosapiaria (Barred Red); M.margaritaria (Light Emerald); H.syringaria (Lilac Beauty); A.prunaria (Orange); S.litura (Tawny Barred Angle); B.abietaria (Satin Beauty); T.brunneata (Rannoch Looper); B.repandata (Mottled Beauty); B.roboraria (Oak Beauty); B.consortaria (Pale Oak Beauty); S.fagaria (Grey Scalloped Bar); P.strigillaria (Grass Wave); Z.purpuralis (Transparent Burnet); Z.achilleae (Oban Burnet); Z.lonicerae (Narrow-bordered 5-spot Burnet); I.globulariae (Scarce Forester); I.geryon (Cistus Forester); C.limacodes (Festoon); H.asella (Triangle); C.cossus (Goat); Z.pyrina (Leopard); P.castaneae (Reed Leopard); T.crabroniformis (Lunar Hornet); S.tabaniformis (Clear Underwing); S.scoliaeformis (Welsh Clearwing); S.spheciformis (White barred Clearwing); S.andrenaeformis (Orange-tailed Clearwing); S.tipuliformis (Currant Clearwing); S.myopaeformis (Red-belted Clearwing); S.culiciformis (Large Red-belted Clearwing); S.muscaeformis (Thrift Clearwing); S.chrysidiformis (Fiery Clearwing); H.humuli (Ghost Swift); H.fusconebulosa Map-winged Swift); H.hecta (Gold Swift); S.flaventris (New Clearwing).

L.sibylla (White Admiral); P.c-album (Comma); A.urticae (Small Tortoiseshell); A.cydippe (HighBrown Fritillary); A.selene (Small Pearl-bordered Frit.); M.athalia (Heath Frit.); E.epiphron (Small Mountain Ringlet); M.jurtina (Meadow Brown); C.tullia (Large Heath); S.pruni (Black Hairstreak); P.argus (Silver-studded Blue); L.bellargus (Adonis Blue); M.arion (Large Blue); O.venata (Large Skipper).

B. A. C.

MEMBERSHIP CHANGES.

Newcomers:-

No. 165 B. M. Riley, 3, Manor View, Squires Lane, London, N.3. (Lepidoptera).
166 F. D. Coote, 32, Wickham Avenue, Cheam, Surrey. (Lepidoptera, Botany).
167 T. Coleshill, 2, Brooklands Road, Reddish, Stockport, Ches.(Lepidoptera).
168 J. A. Humphreys, 155, Reigate Avenue, Sutton By-pass, Sutton, Surrey (Lep.).
169 L. S. F. Waddington, "Wala", Rose Hill Rise, Bessacarr. Doncaster,Yorks.(Lep)
170 W. A. Christianson, Minnesota Gardens, Hinckley, Minnesota, U.S.A. (Lep.).
171 A. C. Reynolds, c/o H. Farthing, East Mersea Hall, Colchester, Essex. (Lep.)
172 E. F. Herroun, North Bank, Yorke Road, Reigate, Surrey. (Lepidoptera).

Change of Address: A. J. Slatter (No.131) to - 22, Cedar Road, Teddington, Middx.

Resigned: No. 7.

PRESENT TOTAL: 149.

WANTS & EXCHANGES

D. H. Starling (no.84) has for exchange larvae of potatoria (Drinker) and hopes to have ova of tiliae (Lime Hawk) by the time this is published. Wants - other larvae.

G. K. Hebbert (No.81) wishes to correspond with others interested in coleoptera, and also to exchange specimens. He is making a collection for Ilfracombe Museum.

W. A. Christianson (No.170) wishes to exchange N. American butterflies for others from any part of the world.

Wanted - As many Silver Y moths as members can send - condition immaterial. Booth Museum, Dyke Road, Brighton 5, Sussex. Please state method of killing and locality of capture. Postage refunded if asked for.

D. T. Lees-Smith (No.110) would like to hear from any boys who might care to receive butterflies from him during the year when he is in Switzerland. He also wishes to receive specimens of P. astrarche var. salmacis (Castle Eden Argus) and var. artaxerxes (Scotch Brown Argus).

N. A. B. COLLYER (No.132) being unable to collect this year after all, has large amount of new apparatus etc. for sale at low prices.

WITH APOLOGIES
FOR [illegible]

PRESENTED

THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

BRITISH MUSEUM (NAT. HIST.) DEPARTMENT OF ENTOMOLOGY

VOL. 3 NO. 28 PRICE SIXPENCE JULY 1938

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The next Bulletin, No. 29, will be issued in early September.

MEETINGS:- THOSE ATTENDING should bring lunch with them; arrangements will be made for tea by the leader. Recognition of other members of the party will be by sticks and nets carried. In every case there will be frequent return trains to London. Meet @ destin^{n}.
Sat. Aug. 6th - BOX HILL. Waterloo 10.27a.m. or 1.7 p.m.(or 1.27), Epsom 10.55, 1.35, 1.55, where those from Lond. Bge. or Victoria may join. Expect to take: corydon, bellargus, ligustri(1), efformata, gilvari
Sun. Aug. 14th - EFFINGHAM. Waterloo 10.38a.m., Clapham J. 10.45, Wimbledon 10.51, Surbiton 10.58, arr. 11.16. Many spp. larvae w.b.fd.
Sun. Aug. 28th.- BENFLEET, ESSEX. Fenchurch St. Stn. 9.45, arr. 10.45. Through trains North London L.M.S. rather [illegible]. Expect to take c-album, also larvae of smaragdaria, athalia, [illegible]llica.
Sun. Sept. 11th - CHORLEY WOOD. Baker St. 10.6, Willesden Grn. 10.14, Harrow 10.27, arr. 10.55. Larvae, coryli, fagi, sylvata occur here.
All trains will be met at destination by a leader.

ERRATA - Full memb. list - 137, F.W.Byers, 59 Gurney Court Road, St. Albans, Herts.

TILLEY COLLECTING LAMP - (see P. 68) - Full arrangements have now been made for the sale of special collecting lamp through A.E.S. Price 45/-, carriage paid. J.E.Knight, Toftrees, Woodside Ave, N.12

- Published by the Society in London -
(61, Okehampton Road, N.W.10)

THE AMATEUR ENTOMOLOGISTS' SOCIETY

The minimum annual subscription, covering the year's Bulletins, supplements, and membership lists, is 5/- post free, or 4/- for those under 21. This covers only the expenses concerned with the productions of the Society's journal, and those who are able to do so are asked to give a little extra towards the cost of advertising, a very necessary item in our economy. Payment should be made to the Hon. Treasurer, R. Hilliard, at 5, Oakleigh Gardens, Edgware, Middlesex. New members should send their first subscription to the Hon. Secretary when applying for membership.

Contributions, exchange notices, and suggestions for the Bulletin should be sent to the Hon. Editor, B.A.Cooper, at 61, Okehampton Road, London, N.W.10. Hints, observations, queries, and replies are especiall desired, but any matter, long or short, likely to be of interest to the amateur will be very welcome. It is hoped that every member will make at least one contribution during the year.

Field meetings are held throughout the summer months in the London area, visitors, as well as members, being welcome. Enquiries regarding these, enclosing a stamp for reply, should be sent to the Hon. Meetings Secretary, D.H.Sterling, at 91, Calbourne Road, London, S.W.18. Offers to lead rambles, and suggestions, should likewise be sent to the latter.

The "Wants and Exchanges" section is free to all members. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus, and live insects, leaving that of set, pinned, and unpinned insects to those who have had more experience. The Editor offers no guarantee for goods offered here, and he cnanot be held responsible should the priveledge allowed be abused. Beginners, seeing rare species mentioned, should not be afraid to offer or ask for common things, since others may be in the same position as themselves. This section offers the best means by which widely placed members may come in contact with one another. Unless directed otherwis exchange notices will be inserted in the Bulletin once only. Addresses will be found in the membership list, changes being recorded in later Bulletins.

We are able to reproduce SMALL drawings and diagrams if authors send us a facsimile drawn in Indian ink the exact size they wish the reproduction to appear - maximum measurements 11 ins. long x 7 ins. wid.

Will correspondents please remember that a reply can only be giv other than through the Bulletin if they enclose a stamp for return postage. If contributors desire the return of their mss. after publication, will they please mention this when writing, and also enclose th required stamp. Questions on subjects not dealt with by the Advisory Panel, should be sent to the Hon. Secretary.

The Hon. Secretary will be pleased to forward a specimen copy of the Society's journal and a prospectus to any non-member likely to be interested, on receipt of name and address. Members may also obtain prospectuses for the asking.

Authors desiring "extras" (reprints of their article alone) may obtain them by ordering at the time of sending in the contribution. Th rates are: first twenty 1/-, each succeeding twenty sixpence, per doul side of printing. Typing appears as in the Bulletin, other matter on same page being omitted.

Anyone at present not recording migrant lepidoptera and dragonfl should write for free information and literature to Captain T. Dannreuther, Windycroft, Hastings. Similarly, those who do not yet record their observations of the [illegible] noting the species on the phenological list, should write to Major H. C. Gunton, Bathgar, Gerrards Cross, Bucks. Literature for both investigations may also be obtained from the Hon. Secretary.

THE ENTOMOLOGISTS' BULLETIN

IS published by the Society nine times per year. Although of interest to all amateur collectors, it especially sets out to assist the less advanced collector and student of entomology. If not satisfied with th Bulletin, write to the Editor about it.

THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

Vol. 3 No 27 July 1938

Dear Fellow Members,

We must deeply apologise for the delay in posting the June issue of the journal. Our previous duplicator found himself unable to carry on and the Editor was not able to make a start till July 1st. Consequently we are greatly in need of someone who will undertake the duplicating of the Bulletin till the end of the year. Next year, with a printed journal, there will only be a single sheet (exchanges, membership changes and editorial) to be duplicated per issue, but till then it will require the help of someone with several spare evenings per month. It may also be mentioned here that the post of Hon. Secretary is still vacant, though the Editor will carry on for the time being until a suitable person has been found to fill the office.

A Committee meeting was recently held and Messrs F.D.Coote and R. Hilliard were elected to that body, Mr. Hilliard accepting the office of Hon. Treasurer; sums sent to other members of the Committee will still be receipted and forwarded by them as hitherto.

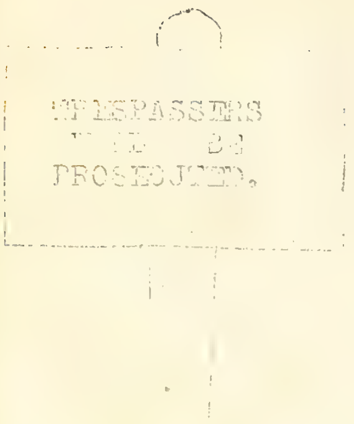
At this meeting a table of rules and constitution for the Society was drawn up; this will be submitted to a General Meeting to be called in London at the earliest opportunity, when also the Committee will be selected. Thereafter the General Meeting will be held annually, to consider accounts, changes of rules, election of the following year's Committee, and other business usual to such meetings. This will ensure that the Committee will consist of those living in or near London, so that they may be called on to assist at any moment if required. Since by far the greater number of our members, however, live well away from the Metropolis, and will wish to air their views, a questionnaire form will be sent round each December for everyone to complete and return. It was also decided to raise the subscription once more - this time to 5/-, for those aged 21 and over. It will be remembered that two years ago the voting of members was in favour of this change by 28 : 3, but that the Editors decided to withold the change for as long as possible, as being likely to cause the resignation of some of our less enthusiastic membdrs. Now that we have decided to change over to a printed magazine, this has become essential.

Some members have for a good time past been asking that we should hold field meetings during the summer months in ggdd spots near to London. Our member D.H.Sterling has offered now to take over this side of the Society's activities, and four meetings have so far been arranged to take place during the summer holiday period. These have been arranged for the alternate day of the week-end to those run by the South London Entomological and Natural History Society, so that there shall be no feeling that we are trespassing on their territory, and so that members common to both Societies shall not feel drawn between two attractions. There will be no extra charge to attend the meetings, and friends and relatives will be cordially invited. We hope this will help us in getting the sixty more members we still need to be able to fully cover the cost of a printed journal. Anyone who has suggestions for, or offers to lead, future meetings, should write to Mr. Sterling at [illegible], Calbourne Road, S.W.12 - enquiries as to further particulars should contain a stamp for reply. It is hoped that this will enable members to meet one another more easily, and that our younger members will be enabled to see how, when, where, and with what, collecting is best accomplished. We hope to hear soon of [illegible] tickets.

We wish you all the best of holiday weather and catches,

Yours sincerely,

BEOWULF A. COOPER



I have been asked by the Editor to write a short article on Trespass and especially how it affects entomologists.

I think that the legal position is pretty well known, but for the benefit of those who do not know, I will commence by saying that the notice "Trespassers will be Prosecuted" need arous no sense of fear in the entomologist's mind that because he enters a wood with such a notice exhibited he will of necessity be hauled up before the local bench and fined or bound over to be of good behaviour. The notice is merely a legal fiction meant as a deterrent, with nothing behind it to justify its grim warning.

The owner of the wood or his keeper cna only request the trespasser to depart, and then, only if the trespasser demurs, cna the keeper remove him, using only such force as is necessary. The trespasser can only be prosecuted for any wilful damage that he commits, but on the other hand the trespasser can also prosecute the keeper for assault if he should use unnecessary force to remove him. These are, of course, abstract points of law, and the main problem is how to deal with concrete examples of the irascible keeper and / or the high handed entomologist.

Most of us will naturally deny that the latter exists but if we think for a moment we shall probably admit that to some people our movements will appear queer and even frightening. The appearance of a net may alone suggest to a zealous keeper designs on game, rabbits or even his precious trout. For example, I was once reported by a keeper to a landlord who gives me permission to go any[illegible] being seen actuall trying to catch the pheasants in my net as they flew by. The landlord luckily recognised the description and retailed the report to me with great good humour. The fact that we are seen with a sugaring tine plastering the trees with this queer sticky stuff arouses in the minds of some, as I know from first hand reports, the notion that we are connected with some form of sabotage. When we carry at least one satchel and are seen perhaps with a small saw at the base of oak and birc trunks in the months of April and May, we naturally at once become suspect in the minds of the less discerning keepers. The fact that so of us go out at night with a light fixed to our foreheads, sometimes off and sometimes on, appearing suddenly from a bush and hedge, and ju ping into the high road, may and does cause fright. I know a case wh an entomologist did this, and a country yokel ran some way in terror the village to explain that he had seen a ghost on the moor, and it w not till some days after that the entomologist heard of it, and was able to dispel the rumour. Pheasants are still very precious to a great number of shooting landlords, and every one who acts in any way s uspiciouly is ipso facto liiked upon by the keeper as a certain poacher, or if not that, as one who will scare the hen pheasants with resultant damage to next year's birds.

All this suspicion is, I think, reasonable, because few ordini people understand the vagaries of the keen entomologist, up all night roaming about all day with a stick, a net and a [illegible] of umbrella. Prima facie he must be mad. What is the remedy? I think the remedy in our hands, namely, to get people interested. I found this very ef ficacious in Scotland [illegible] so much so that I had quite a follow on my sugaring rounds. With regard to general principles it is mos important where possible always to ask permission from the estate: i will [illegible] and if this is impracticable, ssu ignorance of intention to trespass in the gentlest form, and with al the politeness at your command. I was accosted once by the most inf ated gamekeeper that I have ever met. His language was extremely ch [illegible] after he had nearly burst with anger I replied "You know you are not [illegible] If you say please I will most willingly go away". He then [illegible] and after a pause said "Go away - please". I immediately [illegible] Better" and walked off. I was followed by imprecations, but [illegible] that I had managed to uphold the entomologist's dignity.

[illegible] course, such places as the New Forest and Wicken Fen require [illegible] permits, as is generally known. The only other potential danger [illegible] entomologist is the village policeman, with whom I have also come [illegible] - especially so as he got to [illegible] out a flask of whisky in my car, and I soon found that [illegible] patrol his regular beat at that time of night, and he [illegible]

[illegible] I think that we must look upon ourselves as intruders, [illegible] we have to ingratiate ourselves with the owners, and the [illegible] of the country which we wish to explore, and this can only [illegible] by good manners, and enthusiasm for our hobby. If we are ac-[illegible] are sure to be by [illegible] owners and keepers, let us try and [illegible] the words of the famous epigram on Queen Caroline:

"Most Gracious Queen we thee implore
[illegible] sin no more,
[illegible] be too great
To go away at any rate."

G. [illegible] CRUTTWELL

oOo

BEETLE ATTRAHENT

Early this year, about the first week in January, whilst walking [illegible] the cliffs near Preston, I came across a jam jar surrounded by the [illegible] of beetles. [illegible] apparently rolled out of [illegible] pushed out of [illegible] berry bush. Inside the jar were still more dead beetles, in-[illegible] Necrophorus humator (Black Burying beetle) - by far the great-[illegible] number - Geotrupes stercorarius Dor beetle) - about half a dozen [illegible] - Carabus violaceus (Violet Ground beetle) - three specimens - [illegible]crophorus vespillo and N. ruspator (Burying beetles) - one specimen [illegible] - and a few other ground beetles (Pterostychus or Pristonychus). [illegible]m these I took the following in perfect to good condition:- 13 N. [illegible]ator, 1 C. violaceus, 1 N. vespillo, 1 N. ruspator and 2 ground [illegible]etles.

How did all these beetles get into the bottle? I should not im-[illegible]gine anyone would catch all these and put them in a bottle. I have [illegible]ver taken N. humator or N. ruspator before, so I should think they [illegible]uld have had some difficulty in obtaining so many! Being far from [illegible]uses, camps, or places frequented by trippers, it is hardly likely to [illegible]ve been jam or bait put down to get rid of household pests such as [illegible]ckroaches or earwigs - and I am sure the farmers hereabouts do not [illegible] the recipe recommended by gardeners for killing woodlice and ear-[illegible]gs - dissolve sodium fluoride in water, add black treacle in great [illegible]cess, and thicken with bran. In any case, the tastes of the various [illegible]pecies are quite different - Carabus feeds on living prey, Necrophorus [illegible] carrion, and Geotrupes on dung. The poison must have been very [illegible]trong for them to have died in the jar. If there is a coleopterist's [illegible]ugar", can we have the recipe for it published in the Bulletin?

GEORGE BURT

oOo

[illegible]EDING PROMINENTS - P B M Allen warns us (Moth Hunter's Gossip, Chap. [illegible]) that if we would be successful with our Notodontid larvae, excluding [illegible]s, Lobster, [illegible] and Chocolate Tips, we should spray them lightly with [illegible] rainwater every other day, seeing that the larva gets less of the [illegible] than its food plant.

CALENDAR

July and August Lepidoptera:- A very large number of those mentioned in [illegible] on the wing, but newcomers are very numbrous. [illegible] previously mentioned also produce second broods [illegible] period.

H. pinastri (Pine Hawk); O. antiqua (Vapourer); E. chrysorrhoea (Brown Tail); S. salicis (White Satin); L. monacha (Black Arches); M. neustria (Lackey); M. castrensis (Ground Lackey); T. crataegi (Pale Oak Eggar); L. quercus (Oak Eggar); L. trifolii (Grass Eggar); O. potatoria (Drinker); G. quercifolia (Lappet); N. strigula (Small Black Arches); N. centonalis (Scarce Black Arches); H. bicolorana (Scarce Silver Lines); S. revayana (Large Marbled Tortrix); A. caja (Garden Tiger); C. hera (Jersey Tiger); C. senex (Round-winged Muslin); M. miniata (Rosy Footman); O. quadra (Large Footman); L. deplana (Buff f.); L. griseola (Dingy f.); L. lurideola (Common f.); L. complana (Scarce f.); L. [illegible] (Pigmy f.); L. caniola (Hoary f.); P. muscerda (Dotted f.); B. perla (Marbled Beauty); B. muralis (Marbled Green); A. vestigial (Archer's Dart); A. cursoria (Coast Dart); A. nigricans (Garden Dart); A. tritici (White-Line Dart); A. obelisca (Square Spot Dart); A. praecox (Portland Dart); A. lucernea (Northern Rustic); A. simulans (Dotted Rustic); A. agathina (Ashworth's Rustic); N. glareosa (Autumnal Rustic); N. castanea (Grey Rustic); N. baja (Dotted Clay); N. depuncta (Plain Clay); N. stigmatica (Square Spotted Clay); N. dahlii (Barred Chestnut); N. ditrapezium (Triple Spotted Clay); N. umbrosa (Six Striped Rustic); N. sobrina (Cousin German); N. xanthographa (Square Spot Rustic); T. comes (Lesser Yellow Underwing); T. subsequa (Lunar Yel. Und); T. ianthina (Lesser Broad Border); T. interjecta (Least Yel. Und); T. popularis (Feathered Gothic); T. cespitis (Hedge Rustic); C. graminis (Antl H. ochroleuca (Dusky Sallow); H. hispidus (Beautiful Gothic); L. testac (Flounced Rustic); L. guenéei (Lancashire Rustic); C. matura (Straw Underwing); C. haworthii (Haworth's Minor); H. furva (Confused); A. pabulatricula (Union Rustic); A. secalis (Common Rustic); H. literosa (Rosy Minor); M. bicoloria (Cloaked Minor); X. scolopacina (Slender Brindle); A. lutulenta (Deep Brown Dart); H. australis (Feathered Brindle); E. lichenea (Feathered Ranunculus); P. chi (Grey Chi); P. xanthomista (Black Banded); M. maura (Old Lady); H. nictitans (Ear); and H. paludis, crinanensis, and lucens; H. micacea (Rosy Rustic); H. petasitis (Butterbur); O. ochracea (Frosted Orange); N. algae (Reed Wainscot); N. sparganii (Webb's Wainscot); N. typhae (Bulrush W.); N. geminipuncta (Twin Spotted w.); N. dissoluta (Brown Veined w.); N. neur ([illegible] w.); C. rufa (S,mall w.); M. flammea (Flame w.); T. fulva (Small w.); T. hellmanni (Mere w.); C. lutosa (Large w); C. phragmitid (Fen w.); L. impura (Smoky w.); L. straminea (Southern w.); L. impudens (Striped w.); L. brevilinea (Fenn's w.); L. l-album (White L w.); L. putrescens (Devonshire w.); L. vitellina (Delicate w.); L. albipuncta (White Point w.); S. anomala (Anomalous); C. alsines (Uncertain); C. ambigua (Vine's Rustic); P. arcuosa (Small Dotted Buff); A. caliginosa (Reddish Buff), A. pyralina (Lunar Spotted Pinion); C. affinis (Lesser Spotted Pinion); C. diffinis (White Spotted Pinion); A. pyramidea (Copper Underwing); M. tragopogonis (Mouse); C. trapezina (Dun Bar); C. palacea (Angle Striped Sallow); D. suspecta (Suspected); P. retusa (Double Kidney); P. subtusa (Olive); C. xerampelina (Centre-barred Sallow); C. citrago (Orange Sallow); M. gilvago (Dusky Lemon Sallow); M. ocellaris (Pale Lemon Sallow); C. solidaginis (Golden Rod Brindle); C. absinthii (Wormwood); S. libatrix (Herald); P. chryson (Scarce Burnished Brass); P. interrogationis (Scarce Silver Y); C. nupta (Red Underwing); C. sponsa (Dark Crimson Underwing); C. promissa (Light Crimso Underwing); T. craccae (Scarce Blackneck); H. rostralis (Buttoned Snou H. taenialis (White Line Snout); T. turfosalis (Small Snout); G. vern (Small Emerald); A. rusticata (Least Carpet); A. straminata (Dotted Border Wave); A. humiliata (Isle of Wight Wave); A. inornata (Plain Wav A. emutaria (Rosy Wave); A. imitaria (Small Blood Vein); S. sacraria stal); O. limitata (Shaded Broad Bar); O. bipunctaria (Chalk Carpet); paludata (Manchester Treble Bar); T. dubitata (Tissue); L. prunata Phoenix); L. testata (Chevron); L. populata (Northern Spinach); L. sociata (Spinach); C. pyraliata (Barred Straw); C. immanata (Dark led Carpet); C. sagittata (Marsh Carpet); T. cognata (Chestnut coured Carpet); C. munitata (Red Carpet); A. olivata (Beech-green .; O. filigrammaria (Small Autumnal C.); V. cambrica (Welsh Wave); E. flavicinctata (Yellow Ringed C.); E. flavofasciata (Sandy c.); C. rivata (Wood Carpet); M. bicolorata (Blue-bordered C.); P. bifasciata (Barred Rivulet); P. minorata (Heath Rivulet); H. furcata (ly Highflyer); E. denotata (Campanula Pug); E. subnotata (Plain ug); E. succenturiata (Bordered Pug); E. subfulvata (Tawny Speckled ug); E. inturbata (Maple Pug); E. innotata (Angle-barred Pug); E. sorinata (Juniper Pug); P. comitata (Dark Spinach); E. autumnaria arge Thorn); E. quercinaria (August Thorn); E. alniaria (Canary houldered Thorn); E. fuscantaria (Dusky Thorn); E. erosaria (Sept- mber Thorn); C. elinguaria (Scalloped Oak); O. sambucaria (Swallowtail); apicaria (Bordered Beauty); E. parallelaria (Dark Bordered Beauty); gemmaria (Willow Beauty); C. lichenaria (Brussels Lace); C. jubata otted Carpet); G. obscurata (Annulet); G. myrtillata (Scotch Annulet); coracina (Black Mountain); S. ericetaria (Bordered Grey); T. wauaria (); A. gilvaria (Straw Belle); Z. exulans (Scotch Burnet); Z. filipendulae (Six-spt Burnet); S. vespiformis (Yellow Legged Clearwing); S formicaeformis (Red-tipped Clearwing); S. ichneumoniformis (Six- lted Clearwing); H. sylvina (Orange Swift);

G. rhamni (Brimstone); A. iris (Purple Emperor); N. polychloros arge Tortoiseshell); N. io (Peacock); A. paphia (Silver-Washed Fritillary); A. aglaia (Dark-Green Frit.); S. galathea (Marbled White); aethiops (Scotch Argus); E. semele (Grayling); P. megaera (Wall); tithonus (Gatekeeper); A. hyperanthus (Ringlet); T. betulae (Brown airstreak); T. quercus (Purple Hairstreak); S. w-album (White-letter airstreak); L. dispar (Large Copper); L. coridon (Chalk-hill Blue); argiolus (Holly Blue); A. sylvestris (Small Skipper); A. lineola ssex Skipper); A. actaeon (Lulworth Skipper); H. comma (Silver- potted Skipper).

B.A.C.

oOo

QUERIES

o. 60 Four members have lately asked how one can recognise the sex of a butterfly or moth in the absence of clearly visible exual dimorphism of colour, size , or marking. In many species the ale has more strongly pectinated (feathered) antennae than the female, ut until one has met both sexes this test is of little value. Can omeone send us an article on the genital apparatus (external), with ome enlarged diagrams, to explain the only sure (though not always asy) way of being able to spot the sex of a bred or captured specimen?

o. 61 L. R. Stote (184) asks how he may replace "gilt" pins, which he has hitherto used in setting his lepidoptera, by black ones, ince he understands that only the latter are acceptable by most as xchange specimens. Has anyone any suggestions to offer?

OTE:- One or two members have asked for information on collecting amps; this query has already been asked - Query No. 15, March 1937 but no one has taken the trouble to reply. May we ask members to look hrough their back journals and answer, to the best of their ability, hose queries still incomplete, and also to give their own views on nes which have been answered, perhaps not quite fully. Excellent light raps are described in reply to Query 5, on pp. 13-14 of the Reprint of ur Vol. 1, which should be of great value to anyone living in or near he country.

ED.

REPLIES TO QUERIES

No. 29 I have used a Tilley Storm Lantern for twelve months past, and have found its attractive powers to be excellent in most situations. It is cheap to run and easy to clean and obtain spares. Such disadvantages as it possesses are mainly due to the use to which it is put, and not to its construction. A somewhat similar lamp, the "All-Round Inspection Lamp", A.L.88, has these disadvantages materially reduced, but its price is very much more. We are hoping to persuade the same manufacturers to produce a hybrid lamp, possessing the good points of both these types of lamp, and specially suited to entomological uses. The Editor's lamp has been modified slightly towards this hypothetical collecting lamp, and the points changed have proved themselves to be well founded, and the lamp is now a far more useflu collecting tool.

J.E.Knight and I, to test the two lamps and compare them with his Primus paraffin lamp, rigged up a crude photometer in his garden. Unfortunately the two lamps were not in the best condition for a conclusive test, owing to dirty globes and broken mantle, but the relative powers estimated cannot be far off the correct figures. The two lamps to the naked eye appear to be of about equal brilliance, but this apparently is not so, probably owing to the glare and brilliance making judgement impossible. Assuming the Tilley to have been the 300 candle power claimed for it, the Primus (with rough reflector behind it), gave a reading of about 160 c.p., but this should be a little more, no doubt, owing to the dirty mica of the globe. When the Tilley had a reflector placed behind it (as in improved type we are hoping to have made for the use of collectors), it gave a reading of 650 c.p. approx., probably a little higher to the side of the central line. The detatchable reflector is used in walking through a woodland ride, and removed in a minute on reaching a more open spot where the lamp is suspended from a branch or stood on a sheet. The improved type should be even brighter than the one whose figures are quoted, from the removal of a rim present on the Storm Lantern to throw the light downwards, and which cuts out a great deal of light when a reflector is fitted.

The Society will be glad to obtain Tilley lamps for members at th listed prices, and also to give information on their running, etc. E quirers should write to Mr. Knight or the Editor, the matter coming under the Society's Reprint Account.

The lamps may also be used with petrol instead of paraffin (as is usually done abroad), but this is undesirable in Great Britain, wh paraffin is cheap and easily obtainable.

A collector who uses the Tilley Floodlight Projector F.L.6 (sai to emit 5000 mean reflected c.p.), says that it is not worth the outl Besides being heavy and difficult to cart about, it needs to be backe by a storm lantern to be of any real use in collecting, and the cost might be spent far more profitably by one considering its purchase in buying an array of the cheaper lamp - a car would be needed in any ca to carry it about.

Car headlights are an excellent attrahent for moths, being far brighter than any type of collecting lamp. If the car's batteries wil stand being used in this way, there can be no more profitable way of amassing specimens than by shining them down a glade or deserted lan on a good night.

B.A.C.

No. 47 I have also found that when relaxing with phenol as a mould preventative green stains appear on the wings of the Pierid This does not, however, appear to be due to the phenol, as it occurs when relaxing with laurel. In both cases perforated zinc was presen - possibly something to do with the change.

G. H. HILL (164)

o. 54 The best laurel for producing cyanide in killing bottles is the smooth leaved Prunus laurocerasus, the "spotted laurel" r "Portugal laurel" being of no use whatever. The first mentioned ives off hydrocyanic acid when its leaves are crushed; it is slower han a good killing bottle of cyanide, but has the advantage of keeping nsects relaxed for several days, during which they may be set at eisure.

(Answered by R.C.DYSON, D.O.BOYD, and E.F.HERROUN)

o. 61 If enamelling or relaxing and resetting on new pins is out of the question, it will undoubtedly be the wisest plan to replace he specimens in time by new. Mr. Stote has been collecting four years, nd it is in any case probable that he will replace his early specimens y new ones in the course of the next few years; in this time he may ell change his setting methods and style. Perhaps our other members n the same district will be able to give a better verdict when they ave actually seen the specimens referred to. The point is that with new collection it is better to replace specimens deficient in one ay or another rahter than to try and patch them up and give them new ife. This is my invariable rule with mouldy and greasy specimens in y own collection - where, however, there are no rarities to prove he exception to the rule! This, of course, does not answer the query sked.

B.A.C.

oOo

NOTES ON FOOD-PLANTS - POPLAR, ASPEN, SALLOW & WILLOW

All four of these trees are propagated quite easily by means of uttings about ten inches long and planted in ordiniary garden soil. he bottom cut of the cutting should be as flat or horizontal as possible, and just below and eye. The top cut is best made slightly blique above an eye with the slope falling away from the bud. Strong ipe wood one year old should be selected and the cuttings inserted uring October or November - a little sharp sand placed in the bottom f the hole will help the cutting to form roots - and two inches of the utting should protrude from the surface of the soil.

If a tree is required with a clean stem, only one growth should e left and the other side growths removed; it is often advisable to ut weak plants down to two or threee eyes during the winter after the irst season's growth to encourage strong growths the following year.

There are a large number of moths that make use of common varieties of poplar as food-plant, Black Poplar (Populus nigra), Canadian oplar (P. canadensis) and the Aspen (P. tremula) being the species ost frequently selected. Populus alba and P. argentea, the white and silver leaved poplars respectively, are seldom found attacked by larvae.

The Sallow (Salix caprea) is a most useful plant to have in the garden, there being at least a hundred and fifty species of British macro-lepidoptera feeding upon it. The Grey Sallow (Salix cinerea) which I understand is very common in the wild around London, is very similar to S. caprea and can be used for [illegible] purposes. Either the common osier (Salix viminalis) or the white willow (S. alba) form excellent substitutes for sallow, and at the same tiem provide a pleasing winter effect by means of their coloured bark. If real advantage is to be taken of the willows in this respect, Salix alba vitellina should be planted, the colour of its bark being similar to the yolk of an egg, or S. alba vitellina britzensis with bark of a flaming scarlet.

Salix babylonica ramulis aureis is a most graceful pendulous tree with a golden coloured bark and produces a charming effect when used in association with a water garden.

R. C. DYSON, N.D.H.

.MEMBERSHIP CHANGES

Newcomers:-
No. 173 J.C.Key, Cardington, Hall Lane, Upminster, Essex. (L.)
174 Lt. Cdr. P.C.Hulton, Fellover, St. Breward, Bodmin, Cornwall (L
175 J.M.C.Hulton, The Old Malthouse, Langton Matravers, Dorset (L.)
176 C.H.Hards, 40, Riverdale Road, London, S.E.18 (L.)
177 Dr. H. Murray, M.D., Ashbourne, Clonmel, Ireland (L.)
13 F.J.Clarke, Gowdhurst, Chart Lane, Dorking, Surrey (L.)
178 E.K.Smith, Stonehenge, South Hayling, Hants. (L.)
179 William Burton, 18, Terminus Road, Millhouses, Sheffield 7 (L.)
180 R.Hewison,Jun., 6, Gore Road, Ashton Gate, Bristol 3 (L.)
181J J.R.Wager, 338, Blossomfield Road, Solihull, nr. Birmingham (L.
182 R.Fox, The Station Farm, Shenton, Nuneaton (L.)
183 W.E.England, 31, Halesworth Road, Handsworth, Sheffield, Yorks
184 L.R.Stote, 6, Lodge Ave., Cosham, Portsmouth, Hants. (L.)
185 H.C.Harris, 18, Wentworth Mansions, Keats Grove, London, N.W.3

Change of Address:-
No. 65 Dr. Otto Koenigsberger, to: 155, Regattastrasse, Berlin-Gruena
Germany.
162 Miss M. Harry, to: 142, Great Tattenhams, Epsom Downs, Surrey.

Name Removed:- Nos. 30 and 51.

PRESENT TOTAL:- L L161

oOo

WANTS & EXCHANGES

Wanted - As many Silver Y moths as members can send - by the Boot Museum, Dyke Road, Brighton 5, Sussex. Please state method of killing and locality of capture. Condition immaterial. Postage will be refunde if required.

C.H.Hards has young larvae of P. smaragdaria (Essex Emerald) for exchange. He requires mostky northern species, but will be pleased to hear from any member. He uses two 300 c.p. lamps and will be glad to collect with another member, sharing the spoils. (Mem. no. 176).

D.H.Sterling (No. 84) has ova of L. salicis (White Satin) for exchange.

B.A.Cooper has larvae of A. nebulosa (Grey Arches) if anyone requires this species.

D.A.Christianson (No. 170) has for exchange N. American Lepidoptera. Required - British and foreign ditto, especially Papilio.

A. Herder (No. 85) requires set specimens, ova, larvae or pupae of the following;- tincta (Silvery Arches), obelisca (Square Spto Dar, ditrapezium (Triple Spotted Clay), baja (Dotted Clay), dahlii (Barred Chestnut), rectilinea (Saxon), piniperda (Pine Beauty), triplasia (Dar Spectacle), palacea (Angle Striped Sallow), petasitis (Butterbur), interrogationis (Scarce SilverY), templi (Brindled Ochre), asteris (Starwort Shark), and glauca (Glaucous Shears). He can offer in exchange the following:- albimacula (Scarce Coronet), [illegible] (Great Prominent), albicolon (White Colon), unanimis (Small Clouded Brindle), aurago (Barred Sallow), chaonia (Lunar Marbled Brown) and pinastri (Pine Hawk), also larvae of the latter.

E.L.Bean had for exchange the following larvae:- D. tiliae (Lime Hawk), S. ocellatus (Eyed Hawk), D. pudibunda (Pale Tussock), S. sambucaria (Swallowtail Moth) and Automeris io (American Eye Moth). He would like ova of M. stellatarum (Humming-bird Hawk), P. plantaginis (Wood Tiger) and pupae of T. quercus (Purple Hairstreak). (I presume that other stages of these species would still be welcome. ED.)

-0-

THE CLOUDED YELLOW (Colias croceus) has been taken in the south in mar places this summer. Look oub for it in clover fields, and don't forget to record your observations fo this and other migrants to the S.E.U.S.

PHENOLOGICAL RECORDING

Major Gunton has now tabulated and correlated all the records sent in by members last year, and he hopes that many more members will make use of the forms sent round this year. Will observers please fill in the forms in ink, as pencil begins to get rather blurred when the sheet is examined for the n th time. He wishes to thank especially Messrs Hr[illegible] and Chipperfield, who returned excellently completed, quite as useful as any he has received in past years from well-known observers. Other forms sent in tended on the whole to be scrappy - dates too far between to be of any value, or collected from such widely separated localities as to be of little value. It is admittedly very difficult for the majority of members who live in towns to collect and observe more than once a week, and this year we therefore ask those observers who have reason to believe that the first specimen seen is not newly emerged, to note this fact, and if possible to suggest, from condition or abundance, how long it has probably been on the wing. If a species has obviously been on the wing for some while, it is best to omit it from the list altogether, as an incorrect record is worse than no record at all, as has been pointed out before. Very probably many people did not return their forms because they had a number of blanks among their figures. So long as ten or fifteendates are given, spaced well through the season, and all observed at the same locality, the sheet will form a useful table of figures which may be correlated with those from other districts. Details regarding locality, such as height above sea-level (ascertainable from Ordnance Survey map), direction it faces if on a hillside or in a valley, whether open or wooded country, type of soil, and other information which might help in interpreting their figures, are also asked for. But DO remember - only one sheet for one locality - it was non-observance of this point that rendered several of last year's returns invalid. It is scarcely likely that all the species on the list will be found togbther at the locality chosen for observation, and an absolutely complete return is therefore not expected, although . Horder's form was not far off. WE shall be glad to send copies of the phenological sheet to any non-members and Societies who might be able to help (Apply to Hon. Secretary).

B.A.C.

oOo

OBSERVATIONS

E.T.Daniels writes about a Norfolk dragonfly Aeschna isosceles which is found in no other county in the British Isles. Until June 5th he only knew it from Catfield - an area whose invertebrate fauna has been practically wiped out by the February sea flooding - but he was delighted to find the species abundant in three separate localities well away from the "special areas".

T. popularis (Feathered Gothic) at light (see E.B. III p.49):- Dr. C.B.Williams of Rothamsted Experimental Station writes: "It might interest you to know that in the four years 1933-36 I took 269 males and 46 females in my light trap, that is 14% females."

A. Horder (85) of Salisbury took three specimens of the Yellow Belle moth (Aspilates ochrearia) at light, May 19th-21st. It is stated by South to be an inhabitant of the seaboard counties, the only other record from Wilts, to Mr. Horder's knowledge being from Homington.

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THE ENTOMOLOGISTS' BULLETIN

PRESENTED
1938

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

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Owing to the tension in international affairs, certain changes in the meeting arrangements have been made necessary. The first sugaring meeting advertised herein has been cancelled, the lecture by Professor Munro has been postponed for a week, that is till Friday October 14th, and the General Meeting has been postponed by a month till November 3rd. In the event of war, all meetings will be cancelled; the Committee could not in that case undertake to publish the Bulletins as advertised in the Prospectus, but they would endeavour to maintain touch with members from time to time to the best of their ability.

The next Bulletin is due out at the end of October. It is hoped that every member unable to attend will forward to the Editor his views and votes on the new constitution, so that all shades of opinion may be heard at the General Meeting.

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THE AMATEUR ENTOMOLOGISTS' SOCIETY

The minimum annual subscription, covering the year's Bulletins, supplements, and membership lists, is 5/- post free, or 4/- for those aged under 21. This covers only the expenses concerned with the production of the Society's journal, and those who are able to do so are asked to give a little extra towards the cost of advertising, a very necessary item in our economy. Payment should be made to the Hon. Treasurer, F.M. Beard, at 5, Oakleigh Gardens, Edgware, Middlesex. New members should send their first subscription to the Hon. Secretary when applying for membership.

Contributions, exchange notices, and suggestions relating to the running of the Society and its publications should be sent to the Hon. Editor, B.A. Cooper, at 61, Okehampton Road, London, N.W.10. Hints, observations, queries, replies and book reviews are especially desired, but any matter, long or short, likely to be of interest to the amateur will be very welcome. It is hoped that every member will make at least one contribution during the year.

Field meetings are held throughout the summer months in the London area, visitors, as well as members, being welcome. Enquiries regarding these, enclosing stamp for reply, should be sent to the Hon. Meetings Secretary, D.H.& E.W. Classey, 141, Portnall Road, London, W.9. Offers to lead rambles, and suggestions, should likewise be sent to the latter.

The "Wants and Exchanges" section is free to all members. Those who have not been collecting for many years are advised to confine themselves to the exchange of ideas, apparatus, and live insects, leaving that of set, pinned and unpinned insects till they have had more experience. The Editor offers no guarangee for goods offered here, and he cannot be held responsible should the priveledge allowed be abused. Beginners, seeing rare species mentioned, should not be afraid to offer or ask for common things, since others may be in the same position as themselves. This section offers the best means by which widely placed members may come in contact with one another. Unless directed otherwise, exchange notices will be inserted in the Bulletin once only. Addresses will be found in the membership list, changes being recorded in later Bulletins.

Will correspondents please remember that a reply can only be given other than through the Bulletin if they enclose a stamp for retur postage. If contributors desire the return of their mss. after publication, will they please mention this when writing, and also enclose the required stamp. Questions on subjects not dealt with by the Advisory Panel should be sent to the Hon. General Secretary.

We are able toreproduce SIMPLE drawings and diagrams if authors send us a facsimile drawn in Indian ink the exact size they wish the reproduction to appear - maximum dimensions 11 ins. by 7 ins.

Authors desiring "extras" - reprints of their article alone - may obtain them by ordering at the time of sending the contribution. The rates are: First twenty 1/-, each succeeding twenty sixpence, per double side of printing. Typing appears as in the Bulletin, other matter on the same page being omitted.

The Hon. Advertising Secretary will be pleased to forward a specimen copy of the Society's journal and a prospectus and membership application form to any non-member likely to be interested, on receipt of his name and address. Members may also obtain application forms and prospectuses for the asking.

Anyone at present not recording migrant lepidoptera and dragonflies should write for free information and literature to Captain T. Dannreuther, Windycroft, Hastings. Similarly, those who do not yet record their observations on species on the phenological list, should write to Major H.C. Gunton, Rothgar, Gerrards Cross, Bucks. Literature for both investigations may also be obtained from the Hon. Secretary.

THE ENTOMOLOGISTS' BULLETIN

is published by the Society [illegible] ugh of interest to all amateur collectors, [illegible] is [illegible] assist the less advanced collector and [illegible] not satisfied with the Bulletin, write to the [illegible].

ADVERTISERS' ANNOUNCEMENTS.

This page is reserved for members' advertisements (not exchanges), dealers' notices, etc., at cheap rates. For advertising rates, apply to the ADVERTISING SECRETARY, Mr. A.N. BRANGHAM, 1c, HOWITT ROAD, BELSIZE PARK, LONDON, N.W.3. (Telephone: PRImrose 6073). Advertising copy should be sent to Mr. Brangham by the 12th. of the month before the next issue of the Bulletin is published.

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ADVERTISING RATES FOR MEMBERS on this page - 3d per line. Each subsequent line 3d. Remember that every member looks at this page. The easiest way of selling your surplus apparatus or insects is by advertising on this page. Make use of it and help the Society!

* *

EXOTIC BEETLES FOR SALE. A number of perfect male and female HARLEQUIN,

THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

Vol 3 No. 29 September 1938

Dear Fellow Members,

The date for the General Meeting of the Society has now been fixe for 7p.m. Thursday October 6th, the meeting being held in the Kinnaird Room, London Central Y.M.C.A., at the corner of Great Russell Street and Tottenham Court Road, London, W.C.1. It is hoped that as many membe as possible will attend (including lady members, in spite of the meetin place!), each if possible bringing an exhibit of some kind whether liv or dead. The busines s to be transacted includes the approval of the pr posed Bye-Laws for the A.E.S. recently drafted, the election of committ and helpers, consideration of accounts and estimated budget for 1939, and arrangement of meetings for next year. Another item down for discussion is the proposed amalgamation of the [illegible] Field Clu with us. [illegible] founded [illegible] some twenty members, holds meetings [illegible] is unique in that it possesses an instalment scheme [illegible] field meetings, whereby the Society pays fares, etc., [illegible] and member pay the Society a monthly deposit, forfeited on non-attendance. The society has as presidents H.M.Edelston F.R.E.S. and [illegible].D.Riley F.R.E.S., Editor of the "Entomologist".

The exhibition of apparatus and collecting methods which we had hoped to hold earlier in the year has now been provisionally fixed for some time after the coming Christmas. Any suggestions for this, offer to supply or make apparatus, and so forth, will be greatly welcomed.

The committee have now decided on the form to be taken next year by the Society's publication. A printed Journal, probably to be known as the "Amateur Entomologist", is to be produced [illegible], and will con observations, queries and replies, collecting [illegible] hints and book reviews. A sheet or two of duplicated Bulletin will be publishe as at present, that is nine times a year, this containing Editor's and Secretary's notices, items of personal interest, [illegible] lists of wants and exchanges, announcements of coming [illegible] Society (which are to be more frequent), and membership [illegible] estima that this will need a membership of over [illegible] this is to be financial success, but we feel sure that the m[illegible]ction of a printed Journal will ensure this. The cover, it is suggested, might cheapened by the use of a single blockon an entomological subject in of the present index to contents, which would require to be reset eac issue. If any member is able to make good blocks, it would considerb help matters, and might in addition forestall possible dissatisfacti in the way of incorrect entomological details if done professionally

We regret to announce the resignation from the committee of A.N Brangham. The Society owes its present existence very largely to Mr. Brangham's help immediately after the resignation of the founder Mr. and would proffer its thanks in addition for much [illegible] on its behalf since then. Although Mr. Brangham's leisure [illegible] much curtailed, we hope that his ant-breeding activities will not cease entirely.

The posts of Secretary, Advertising Secretary and Publicator a therefore still vacant. We hope further volunteers will come forwar at the General Meeting.

Yours sincerely,

BEOWULF A. COOPER

PORTSMOUTH LEPIDOPTERA

My collection has been built up almost entirely from the districts srrounding Portsmouth where I live. About forty miles to the west i the New Forest, and to the east many of the Sussex woodlands are wthin easy reach - these, strangely enough, I have found more productie than the New Forest. The country included in this district is vry wooded, oak being predominant, with birch, sallow, poplar, hawtorn and sloe also common. Besides these many other trees are locally cmmon, although in many places I have not yet worked these patches. Tere is also a good variety of low-growing plants, but in many cases tey require finding, and I am always making new discoveries.

Generally speaking, the best all-round district that I have yet fund is situated within five miles of the heart of Portsmouth. To the nrth of the city are the South Downs, much of which district belongs t the War Department, and the part to which I refer has never been in cltivation, and is covered in aspens and birches, with an undergrowth c bramble, bracken and a multitude of low plants of all kinds. Here Ihave caught the Pale, Lesser Swallow, and Pebble Prominents commonly, ad a single specimen of the Chocolate Tip. The larvaeof Puss and Poplar Hawk are common on the aspen, while the latter is often attracted to light. Last year I obtained here at sugar one specimen of the Figure of Eighty, and one larva by beating, although, generally speaking, results from beating aspens are poor. I have also had one or two captures of the Coxcomb Prominent, but I can generally find this moth commonly elsewhere in spite of the good growth of birch and the relative bundance of the Lesser Swallow Prominent. (Why the latter? - ED.)

The Buff Arches is very common at sugar, and I have netted and aken at light the Peach Blossom, but it is not very common. Perhaps I had better mention that for the purposes of this article I consider moth common when I can catch four or five specimens in a night, airly common when I catch the same number in a season, and uncommon hen I only obtain single specimens during the year. The Yellow Tail s the only tussock that I have caught here, and it is very common ndeed, males chiefly, but also females coming to light in all weathers. have no doubt that the Vapourer is here too, but I have not yet found t. Lackey males are very common visitors to light (car head lights), hey making their presence immediately known with a stunning bump gainst the car radiator; the larvae generally feed on hawthorn and loe, but I have found them singly on birch and dwarf sallow (*S. repens*).

The Hook-Tips are well represented by the Pebble, Oak, and calloped Hook-Tips and the Chinese Character, but the Oak Hook-Tip s not common, as the growth of oak is very small, being confined to ot more than a dozen bushes or small trees. White and Buff Ermines re common at light although I have not yet noticed the caterpillars, nd I have had single specimens of the Ruby and Garden Tigers, and he Rosy and Orange Footmen. The Common Footman is very common.

The Noctuids I have taken at this spot are far too numerous o mention each by name, but amongst the better species are the Scarce Dagger, Dotted Clay, Ingrailed Clay, Lesser Yellow Underwing, and the Lesser Broad Border, the Treble Lines (including the varieties *approximans* and *obscura* and others of which I do not know the names), the Clouded Drab (not very common in the district), Shark, Marbled White Spot, Blackneck, and the Herald; last year I found a chrysalis of the last mentioned on Black Poplar, from which the moth emerged on June 3rd after being kept in a natural condition in the open air - I believe this is considered an exceptionally early date.

The Geometers are not quite so good in quality, but I have found the larvae of the Large Emerald on birch in the spring after hibernation. The imagines taken here include the Chalk Carpet, Brown Scallop, Purple Bar (very common), Pretty Chalk Carpet, Shoulder Stripe and Streamer, White Pinion Spotted, and Scorched Carpet.

Another district which I work is Westbourne Woods and the surrounding woodlands which are just over the border in Sussex. In these woods I have caught very commonly the Marbled Brown, the Great Prominent, and less commonly the Lesser Swallow, Pebble, Iron, and Coxcomb Prominents. The vegetation here is largely oak woods, birch here and there, some sallow, nut, and what perhaps I might call odds an ends. The Vapourer and Yellow Tail are again common, and the Black Arches less so. The males of the last species I have noticed come read to light. The Pale Tussock is common generally through these woods, but, contrary to the opinion given by Richard South, I have found that it is largely males (not females as he suggests) that are attracted to light. Perhaps I have been unlucky in this respect.

The Oak Hook-Tip is common here, besides the commoner species of the family. Of the Tigers, the Ermines are again very common, as is the Cinnabar. Of this last species I recently caught in one night two specimens, one having the crimson spot at the extremity of the fore wing connected completely with the crimson bar, the other partly so. May I say that I believe that if your aim is to get a good representative collection including varieties, it is essential to catch al that you see, irrespective of the commonness of the species. In addition, I have found that often it is impossible at night to be sure exactly what a species is even when it is in your net, let alone whethe it is a variety of that species.

The Noctuids are not numerous in this district, and sugar if ofte badly attended. I have caught the Nut-tree Tussock here at light and found the larvae on birch. Last year I had four specimens of the Bird' Wing, and single specimens of the Double Lines and Reddish Light Arche at sugar. One evening last autumn I had here what must have been hundreds of male Feathered Gothics flying round my headlights at one time - a really amazing sight. I caught over two dozen at one small sweep of the net.

This is a very good locality for Geometers. Once again individuals are too many to mention separately, but of the better kinds I have found the Large and Blotched Emeralds both fairly common; also the Birch Mocha, Small Blood Vein, Treble Bar (*Anaitis efformata*, not *plagiata*, I suppose? - ED.), Barred Red, Purple Thorn, some fine vari of the Spring Usher, the Pale Brindled Beauty, Oak Beauty, Mottled Beauty (very common), Brussels Lace, and Grey Birch. Recently I also had a newly emerged specimen of the Scorched Wing come to light.

Further on still into Sussex is another overgrown patch on the Downs called Stoke Clump. Here the vegetation is largely beech, bramb and dense undergrowth. I have never yet worked this district over a complete season, but from what I have seen of it, it appears very promising. I have found here the larvae of the Figure of Eight on hawtho Lackey on sloe and Pale Tussock on oak. The moths I have caught include the Shears, Lychnis, Mullein Shark, Clay Triple Lines and the Sandy Carpet (in May of all months). I have also found here specimen of the Yellow Shell with dark ochreos bands across the wings, and in some cases slightly marbled with ochreous on the fore wings.

To return again to Hampshire, in woods near Hambledon, I have found the Barred Umber commonly, but generally speaking I have not wo this side of Portsmouth at all seriously as I have found the Sussex side infinitely better. And strangely enough I have never yet been t the New Forest at night - a treat I keep promising myself.

On the Downs right above Portsmouth I find larvae of the Oak Eg every year feeding on a small patch of bramble about 200 yards by 30 yards. A fact I have not yet noticed in print about this moth is tha after hibernation and before the caterpillar assumes its summer attire it is very fond of basking in the sun, at which time it is of course very difficult to see. The same applies to the larva of the Drinker which I also find commonly a few hundred yards away on annual meadow grass. The usual downland species are also found here.

In conclusion I would like to say that if by chance any members fnd themselves in Portsmouth and would like to look me up, I shall be vry pleased to see them, and, if possible, arrange a joint mothing opedition. And just one other thing; as I pillbox the majority of m captures, I get many ova during the course of a season which I fequently do not require. It is impossible to guarantee exactly what Ido get (as an instance, this year I have had ova of the Mullein Shark, te Oak Hook Tip, the Square Spot, the Clay Triple Lines among others), bt if members would care to send me a list of possible species they w wuld like to have, I will do my best to suit in rotation.

D. N. PURSER

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CALENDAR

September and October Lepidoptera:- Now is the time to look for: A diluta (Lesser Lutestring); L.protea (Brindled Green); A.nigra (lack Rustic); D.templi (Brindled Ochre); P.flavicincta (Large Rnunculus); A.aprilina (Merveille du jour); P.meticulosa (Angle Sades); O.lunosa (Lunar Underwing); A.lota (Red-Line Quaker); A. rcilenta (Yellow-Line Quaker); A.circellaris (Brick); A.helvola (Rounded Chestnut); A.lychnidis (Beaded Chestnut); A.litura (Brown-Sot Pinion); C. aurago (Barred Sallow); X.lutea (Pink-Barred Sallow); fulvago (Sallow); H.croceago (Orange Upperwing); C.vaccinii Chestnut); O.ligula (Dark Chestnut); O.rubiginea (Dotted Chestnut); C.erythrocephala (Red-Headed Chestnut); E.satellitia (Sattellite); L.semibrunnea (Tawny Pinion); L.socia (Pale Pinion); G.furcifera Conformist); G.ornithopus (Grey Shoulder-Knot); C.exoleta (Sword-rass); C.vetusta (Red Sword-Grass); O.cervinata (Mallow); C. partiata (Streak); C siterata (Red-Green Carpet); C.miata (Autumn Green Carpet); T.firmata (Pine Carpet); O.dilutata (November); O. autumnata (Autumnal); P.lapidata (Slender-Striped Rufous); P. luviata (The Gem); G.rhamni (Brimstone Butterfly); P. c-album (Comma); N. polychloros (Large Tortoiseshell); A.urticae (Small Tortoiseshell); N. io (Peacock); V. cardui (Painted Lady); V.atalanta (Red Admiral); T.betulae (Brown Hairstreak); L.phloeas (Small Copper); L.bellargus Adonis Blue); A.comma (Silver-Spotted Skipper); and probably a umber of species not normally second brooded.

The Principle attractions this month are light for most of the geometers, some noctuas, and second brood or immigrant hawks; at sugar, specially when daubed or sprayed on leaves, the "sallow" type noctuas ongregate in numbers when the weather is moist and mild. Ivy blossom s likewise an excellent attraction, for which a long-handled net, preferably with a light at the top, will be needed for good results. y day, the flowers of Sedum spectabile, Buddleia, Dahlia, Kentranthus nd Michaelmas Daisy will be found well attended in good weather by utterflies.

B.A.C.

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FIELD MEETINGS

The following arrangements have been made for field meetings uring September and October. Meet at destination.

SATURDAY SEPTEMBER 24th; BYFLEET. Meet at Station at 1.33 p.m. Members arriving at other times to those stated should look for the party along the canal banks towards Woking. Alni, leporina, fagi, ziczac, furcula and dromedariaus occur here. Train leaves Waterloo at 12.57 p.m., Surbiton 1.13.

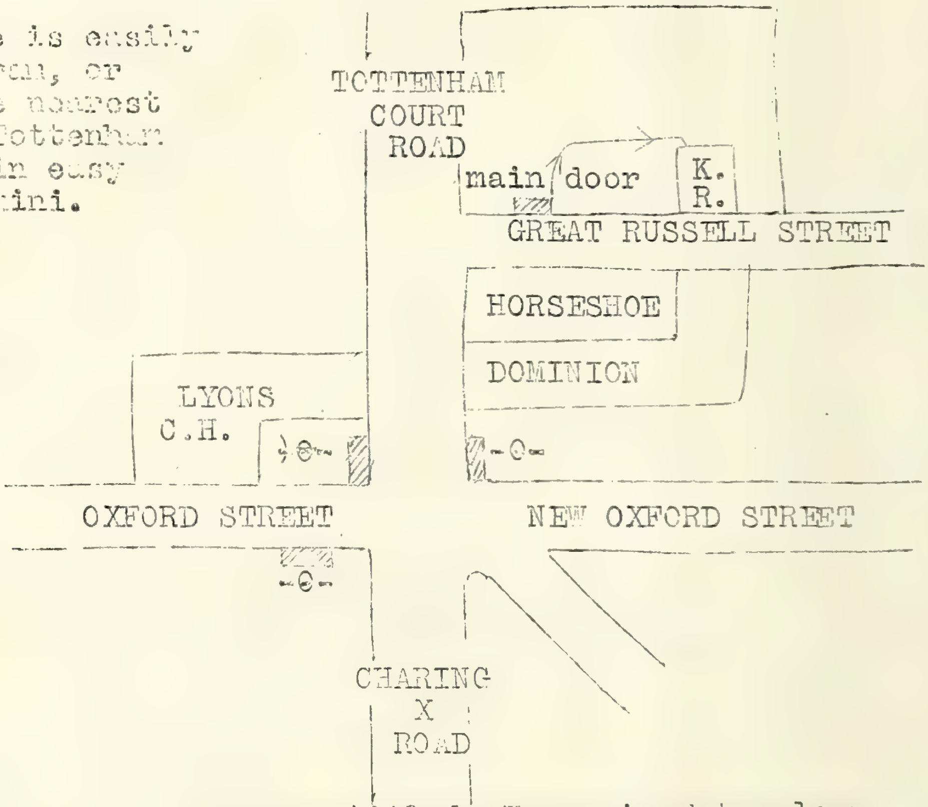
SUNDAY OCTOBER 2nd: BOOKHAM sugaring meeting - members should supply their own sugaring mixture. Waterloo 3.2 p.m., or Victoria/be had. (Change at Epsom) 2.45 p.m. Arr. 3.45. at Bookham where tea will

SATURDAY OCTOBER 8th: STANMORE sugaring meeting. Meet at Stanmore ponds (top of hill - ask) at 4 p.m. Frequent trains from Baker Street.

OTHER MEETINGS IN OCTOBER

OCTOBER 6th, Thursday: GENERAL MEETING of the A.E.S., 7 p.m., at the Kinnaird Room, London Central Y.M.C.A., Great Russell Street, W.C.1. On entering the building by the Great Russell St. entrance, proceed to back of Hall, turn right, and the Kinnaird Room will be found at the bend in the passage on the right. Only members whose subscriptions for this or next year have been paid will be entitled to vote or bring forward motions. Visitors are welcome, and are invited to bring exhibits. Thsoe unable to attend because of distance or otherwise, are asked to forward their views, recommendations, nominations and votes for and against the suggested nominations and rules to the Editor as early as possible ~~to the Editor~~ before the meeting. The agenda is as follows: (1) Opening words (2) Elections of Temporary Chairman and scrutineers (3) Read and discuss proposed Bye-Laws (4) Election of Officers and volunteers to assist. (5) Statement of accounts and proposals for next year (6) Future meetings (7) A.O.B. (8) Examination of exhibits. Please do not forget to bring something with you to exhibit.

The meeting place is easily got at by bus, tram, or trolley-bus. The nearest tube station is Tottenham Court Road, within easy reach of all termini.



OCTOBER 7th, Friday: A LECTURE entitled "Economic Entomology - Its r and development" will be delivered by Prof. J. W. Munro in the Botany Lecture Theatre, Royal College of Science, Prince Consort Road, off Exhibition Road, South Kensington, S.W.7, at 5.15 p.m. Tea will be served in the Elementary Laboratory (upstairs) at [illegible].45 p.m. Visitors welcome.

Lectures on natural history subjects are held every Friday till December 9th and from January 13th to March 17th at the above place and time, anyone interested being welcome. Further particulars may be obtained from the Hon. Secretary, Royal College of Science Natural History Society, B. [illegible] Cooper, Imperial College Union, Prince Consort Road, S.W.7.

RECEIVED

We wish to thank the sender of two issues of the Sussex Daily News (September 9th and 10th), these containing accounts of the visit of King Boris of Bulgaria, a keen lepidopterist, to the exhibition of butterflies held at the Booth Museum, Brighton. Our member Major Blackiston was responsible for the display, which was on an even grander scale than last year's exhibition.

PROPOSED BYE-LAWS OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

(t the time of typing these have not been agreed to by the Committee, nt as this is not a final wording, but a draft open for discussion and dification by members, this does not matter).

- NAME:

The Society shall be known as the Amateur Entomologists' Society, d its official address shall be that of the Hon. Secretary in of-e at the time.

2- OBJECTS:

a) To encourage entomology as an amateur and recreative pur-sit.

b) To broaden the general collector's outlook on entomology and courage a deeper interest in the hobby.

c) To bring collectors into touch with one another, and to omote correspondence and meetings between those with like interests.

3- METHOD:

a) By the publication of a ~~bimonthly~~ printed Journal - The Am-emr Entomologist - as far as possible bimonthly, to contain articles, ok reviews, queries and replies, collecting and breeding hints and servations, practically all of which are to be contributed by the mbers themselves.

b) By the publication of a duplicated Bulletin as far as pos-sble nine times a year - to contain editorial and secretarial not-ies, wants and exchange lists, announcements of forthcoming meetings d membership lists.

c) By the carrying on of such business as will enable a capital be built up for the financing of the publication of books and mphlets of value to the amateur entomologist, or the interest om which capital may be devoted towards the production of the Journal.

d) By holding indoor and field meetings, to be held wherever ssible in co-operation with existing local natural history societies.

4- MEMBERSHIP:

a) Membership shall be of two kinds, namely Honorary and bscribing.

b) Honorary Members shall require to be elected by the Excec-ive Committee, and shall be entitled to receive free the Journal ly, except wheree the Committee think otherwise.

c) Anyone interested in entomology may become a Subscribing mber of the Society, unless the Excecutive Committee considers hat it is in the interests of the Society for such membership to e refused. Subscribing Members shall pay an annual subscription of /- (4/- for those aged below 21), due on January 1st. If this sum s not paid by April 1st, the Committee may, after sending a single minder, remove that member's name from the membership list, when l benefits of membership shall cease. The subscription of members ining after September 1st shall cover the period from the time of ining till the end of the following year, other subscriptions overing the calendar year only.

d) Subscribing Members shall be entitled to vote at all meetings, o receive all Journals, Bulletins, supplements and membership lists ssued during their period of membership, and to contribute articles, xchange notes, and soforth to the Journal or Bulletin, subject to e acceptance of the Editor.

e) Visitors shall be welcome at meetings, but shall not be entit-led to vote.

- MANAGEMENT:

a) The property of the Society shall be vested in two trustees ho shall be elected or removed from time to time as a majority of he members present at a General or Special Meeting shall decide.

(MANAGEMENT contd.)   annually elected

b) The Society shall be governed by an/Executive Committee consisting of the following seven Officers and not more than three ordiniary members:- Chairman of the Executive Committee, General Secretary, Editor, Treasurer, Meetings Secretary, Advertising Secretary, and Business Manager. All are honorary posts.

c) A quorum of five shall be needed before any business shall be transacted by the above committee.

d) The Executive Committee shall meet at least four times annually to conduct the Society's business, at the demand of any of its members.

e) The Executive Committee shall have power to fill any vacancy among its members or other official post, between two consecutive Annual General Meetings.

f) The Executive Committee shall have power to appoint sub-committees from its members to carry out such duties as it shall specify, and shall delegate it such executive powers as it my determi

6 - OFFICERS:

The following Officers shall be elected annually at the Annual General Meeting: President and not more than three Vice-Presidents; Chairman of the Executive Committee, Editor, General Secretary, Treasurer, Meetings Secretary, Advertising Secretary and Business Manager; also the Auditors and Trustees.

7 - EX-OFFICIO HELPERS:

The following Helpers shall be appointed by the Executive Committee: Librarian, Members of the Advisory Panel, printers, duplicators, posters, typists and any others who may be willing to assist.

8 - MEETINGS:

a) A General Meeting shall be held annually during the first third of the year. At this meeting members may bring forward any moti or ask any questions relating to the management of the Society. The Treasurer's report and the audited accounts and balance sheet shall be read, followed by the Secretary's report of the Society's activiti during the past and coming year. The election of the Executive Committee and other Officers shall then take place. Notice of the A.G.M. shall be published in the Bulletin or sent by circular to all members at least two months previous to the meeting. Suggested rule changes must be forwarded to the Editor at least a month before the General Meeting for consideration by the Committee. Nominations by the Committee are to be published in the Bulletin or sent by circular to all members at least a fortnight before the meeting.

b) Special Meetings. The Executive Committee shall call a Special Meeting on the signed application of at least six members stating the object for such a meeting. Notcie of the meeting and its object shall be published previously, as in Bye-law 8a.

c) Other indoor meetings shall be held wherever possible in conjunction with other natural history or similar societies, or at the homes of members. The expenses incurred shall be financed by those present, profit or loss being equalised by the Meetings Accoun

d) Field Meetings shall be attended at the meeting place by a leader, whatever the weather.

9 - ACCOUNTS:

a) All Officers and Helpers shall keep careful accounts of all sums and stamps with which they are entrusted, and shall render those with receipts, receipt counterfoils, and an inventory of the Society' property in their possession, to the Treasurer at the end of each yea, or as demanded. They shall send numbered receipts for all amounts they receive of one shilling and over.

b) A statement of the Society's accounts, duly audited, shall be sent to all members by circular or published in the Bulletin at the beginning of each year.

CCOUNTS contd.)

c) A list of ~~member~~ donors' names and gifts shall be similarly nt to every member annually.

1 - CHANGES OF RULES:

These can only be undertaken by the approval of a majority at General or Special Meeting. All such alterations to the Bye-laws all be published in the Bulletin.

-:-

In addition to the above Bye-Laws, a table of duties for each ficer has been drawn up by the Secretary, and this will be circulated members of the Excecutive only.

-:-

MINATIONS TO DATE:

ESIDENT: None have yet expressed their willingness to hold this post.
ce-Presidents: N.D.Riley,/F.R.E.S. Editor of the "Entomologist" and Keeper
of Entomology, British Museum (N.H.)
K.G.Blair, D.Sc., F.R.E.S.
G.V.Bull, B.A., M.B.
airman: S.G.Abell (A.E.S.)
Mr. F.D.Coote, who was nominated, does not wish to stand.
neral Secretary: D.H.Sterling (A.E.S.)
easurer: R.Hilliard (A.E.S.)
E.Duffy (E.F.C.)
itor: B.A.Cooper (A.E.S)
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etings Secretary: E.W.Classey (E.F.C.)
Committee Members: A.J.C.Simpson (A.E.S.)
D.Fletcher (E.F.C.)
R.D.Eady (E.F.C.)
H.C.Harris (A.E.S.)
C.H.Veale (A.E.S.)
T.G.Howarth (E.F.C.)
F.D.Coote (A.E.S.)

oOo

MEMBERSHIP CHANGES

wcomers:-

186 H. Spencer, 80, Park Road, Elland, Yorks. Lepidoptera.
187 G.H.McLaughlin, 86a, Elsham Road, London, W.14. Coleoptera.
188 B.A.Killy, Sidney Sussex College, Cambridge. (L.? Coleoptera, General Entomology).
189 A.W.Sherriff, 11, Essex Road, Stevenage, Herts. Lepidoptera.

ange of Address:-

77 W.N.Roberts, to: 44, Bishops Mansions, Bishops Park Road, London, S.W.6.
85 A.Horder, to: Grove House, Elm Grove, Salisbury, Wilts.
130 E.Ramsden, to: 129, Manygates Lane, Sandal, Wakefield, Yorks.

ESENT TOTAL: 165.

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SENDING SET SPECIMENS BY POST

The box containing the specimens should be sent in a larger box cked tightly with balls of crushed paper. As a further precaution, strip of cotton wool pinned in with the specimens will collect ything that may break off

FIELD MEETINGS - AN OBJECTION

A member, Rev. P.K.Venner, in a letter to the Editor, writes as follows: "Now anent this field meeting business - Let me say quite plainly that I think it is a great pity for our Society to get up rambl for collecting. Imagine what would happen to a very local species, which might be in just a small area, when say a dozen or twenty people invade its habitat; if each takes a dozen larvae or half a dozen pupae or perfect insects it is bound to affect the colony very adversely - especially if those rambles are broadcast and followed by others, or if the localities are returned to later by individuals without any scruples, and who would rather carry out their vandalism unobserved. Collectors in Hampshire will tell you that the almost total disappearance of Apatura iris, the Purple Emperor, is due to over collecting; entomologists and dealers would pay the country children a shilling each for larvae, and crowds would invade the Forest to search on Saturday afternoons. When you think of the huge area of ideal country it seems almost incredible, but it shows what can happen, and, indeed, has happened also to other much less eagerly sought after species in th New Forest. I hope that the Society will not hold any more".

To this the Editor replies assuring members that field meetings will not be held indiscriminately in places where there is any possible chance of inflicting permanent damage on the local insect fauna. Meetings are held so that members may meet one another and gain collect ing experience. The object is to encourage the naturalist spirit among members, so that they may say "That looks a likely spot for so-and-so" rather than having to "Get in touch with someone who knows the locality" to obtain a species. The Editor has been astonished by the number of people who "know of a locality" for this or that widely-distributed species. Surely life is not so short that one must "obtain a series" while knowing little or nothing about the distribution and bionomics or one's captures? Our field meetings will be found to provide good sport and naturalist-training, good weekend relaxation and companionship, and, if personal judgement is preferred to the meth of "knowing someone who knows a locality", the meetings will be much enjoyed; but if not, we must ask visitors to stay away. The immense decrease in collecting in the last thirty years have reduced the dangers of extermination to a very great extent, although the modern ease of travel by rail and road have tended to produce the reverse effect, especially with the lesser known out of the way spots. With species which fluctuate in abundance from year to year, there can be no harm done in taking a series in a bumper year, but the point to remember is that none must be taken when the species is not too abundant. The A.E.S. will do everything in its power to urge its members when out collectin to use the utmost moderation in the numbers they take - especially whe they meet with a rare or local species, or when they are collecting in places frequented by other entomologists, where the combined and continual persecution may in time have a disastrous effect.

B. A. C.

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MOUNTING MOTH-BALLS

Have handy a number of "moth-balls" and "Lilliputian pins". Hol a pin by the point in a pair of forceps or pliers, heat the head to a bright yellow and immediately plunge it into a moth-ball; it should sink in for half its length. If the pin is overheated it will melt but if not hot enough it will not penetrate to the centre.

Naphthalene balls so treated can be stuck in the cabinet or store-box in any suitable position, and will remain secure until almos entirely evaporated.

JOHN E. KNIGHT

Several queries and replies intended for this issue have been hel over till next month, but we still require articles and observations for that issue. ED.

Butterflies and Moths and Other Insects. Furneaux. Col'd. plates 5/-
The Book of British Butterflies. Lucas. Illustrated. 2/-
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Anyone desirous of obtaining good specimens of exotic Lepidoptera should write to W. MILLARD, "SUENO", DOWN HALL ROAD, RAYLEIGH, ESSEX, who will put them in touch with someone who is disposing of a large collection.

WANTS & EXCHANGES

G.D.S.Greig (10) has young L. quercus callunae (Northern Eggar) larvae for exchange. Wanted - Sphingid larvae, except ligustri or tiliae. Privet or Lime Hawks).

I.S.Beattie (142) has ova of C. elinguaria (Scalloped Oak) and larvae of G. bidentata (Scalloped Hazel) for exchange. Wanted- other species.

B.A.Cooper (19) has ova of E. fuscantaria (Dusky Thorn) and larvae of T. ianthina (Lesser Broad Border) for exchange. Wanted - other ova or larvae.

Wanted - As many Plusia gamma as members can send, condition immaterial. Please state how killed. Booth Museum, Dyke Road, Brighton 5, Sussex.

D.T.Lees-Smith (110) would like to give one pair of perfect bred E. antiopa (Camberwell Beauty) per person in exchange fro pupae of any of the following:- P. machaon (Swallowtail), L. sinapis (Wood White), Callophrys rubi (Green Hairstreak) and all the Sphingidae (Hawk Moths). Only nine pairs to be had.

COMPLAINT - From a member who inserted an exchange notice which brought twenty five replies - he was only able to satisfy the wants of six of these. Another member had no replies to his advertisement for the same thing. MORAL - Take care over the wording of your notice - and ask in exchange for as wide a range of desiderata as possible. ED.

THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

PRESENTED

BRITISH MUSEUM (NAT. HIST.)
DEPARTMENT OF ENTOMOLOGY

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The next issue, No. 31 (December 1938) is due out at the end of November. The following issue (January 1939) is to be printed and circularised to several hundred entomologists in the country not yet members of the A.E.S. We would therefore like to receive an exceptionally good lot of observations, queries and replies and shorter collecting notes. It goes to press early in December.

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY.

Vol.3 No.30. October 1938.

Dear Fellow Members,

The drafted rules for the Society published in the last Bulletin have now been considered by the Committee, and the finally agreed wording is printed as a supplement to the present issue. Most of the changes are minor ones, but one fundamental alteration is made in the last - concerning changes in the rules. In a Society where the greater part of the members reside outside London and are therefore unable to attend a General Meeting, it is obviously not right for the welfare of these outside-London members to be controlled solely by those in London, and where the latter might within the bounds of possibility go against the interests of the former. On the other hand, the Committee must, of necessity, be made up of those living in or around London, in order that they may be able to attend Committee meetings regularly, and so that they may be able to carry out much of the donkey work needed to run the Society. The Committee will therefore need to be elected by the General Meeting in London, as, without personal contact, members will not know for whom they are voting except by hearsay and correspondence. Any suggestions made to the Editor or Secretary by members unable to attend meetings will be brought before the notice of the Committee, and, if worthy of further discussion, will be mentioned in the Bulletin or brought before a General Meeting.

At this our first General Meeting quite a number of members will be present who do not know one another, or who do not know those nominated for official posts. If it was agreed by those present that the A.E.S. and E.F.C. should be amalgamated, it might therefore happen that the newly elected Committee would consist principally of former members of whichever Society had the larger number of supporters present. As such a contest is obviously undesirable, and since the newly formed Committee should be made up of those who will be able to give the greatest amount of work of the most satisfactory standard to the Society for its future betterment, the present Committees of both Societies have agreed that a fixed proportion of each should be allotted beforehand; this would permit of seven A.E.S. members being elected, with three E.F.C. members (including Mr. Clossey, who, although a member of the A.E.S., has been the leading light in the formation of the E.F.C.). The agreed nominations by the two Committees are therefore given in the supplement to this issue. Nominations are naturally still open to members of the Society, to be seconded and voted upon at the meeting. Nominations for auditors (two) and trustees (two) are still required, and if anyone can be approached with regard to the Presidentship, the Editor would be glad to write to him at the earliest opportunity. It may be mentioned that this post is being created in order that it may be filled by someone well-known - one might almost say revered - in the entomological world, and in order that entomologists may realise that we are no longer an upstart Society with little support whose aims and methods are disapproved by our contemporaries.

We are now arranging next year's field meeting programme, and would like to hear from anyone who would be willing to lead a meeting. We now have a group of members in the Brighton district; perhaps these can arrange some meetings together, or possibly meetings with London members in intermediate districts - such, perhaps, as Lewes or Tilgate. Night collecting meetings are difficult to arrange during the period of summer time on account of the impossibility of return by bus or train. Members who possess or are able to borrow cars might be willing to cooperate in arranging night meetings during our busy season, whereby they could transport to or from the meeting place members living in their neighbourhood. Those who approve of the idea are asked to send their names also to our Meetings Secretary with any conditions that may be demanded if they participate.

The articles for the first printed Journal are now being prepared. We shall be glad to hear from any members who have notes of special interest, or can promise articles on collecting, or series of articles which can appear month by month.

Meanwhile may we remind members of the General Meeting on Thursday, November 3rd, at 7 p.m. at the London Central Y.M.C.A. Please do not forget your exhibit.

Yours sincerely,

BEOWULF A. COOPER.

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APPARATUS

It will be found, on referring to a dealer's catalogue, that collecting apparatus of almost every description may be either bought or made to order, and, undoubtedly, it is better to buy the professionally turned-out article when possible. But, unfortunately very few of us can afford to spend more than is absolutely necessary on our hobby. I am going to try, therefore, in this short series, to make a few suggestions on home-made apparatus, which I hope will be of some use to our 'handy' members; adding one or two hints to guide the beginner when making his purchases.

STORE BOXES. Strong serviceable store boxes can be made for very little outlay if care is taken over the choice of materials. The one I am going to describe is of the book pattern, measuring 18" x 12" x 4", and should not cost more than 3 shillings when finished. In the first place a suitable box should be selected and the best for this particular purpose is one of Lever Bros' soap boxes. This will give you smooth, even grained planks about 6" wide and ¼" thick. Having carefully taken the box to pieces, choose four planks that are free from knots and resinous patches, and strip down to 4" wide. Cut two of these 18" long and the other two 11½" long. Then join them together to form a rectangle of the required size, the long sides being fastened over the outer ends of the shorter ones. And here it might be mentioned that it is unwise to attempt joints or mitres when using 'box wood', because it is too splintery. The frame thus formed is next covered in on both sides with 3 ply, and it is a good idea while fastening the first sheet to hold a set square on one of the corners, so as to make sure that the frame is true. The best plan is to cut the 3 ply a little bit bigger than the frame, and then trim the edges afterwards with the plane.

We now have a lidless box which can be cut into two equal halves, using a fine tenor saw. Stand the box up on its side and cut down one of the long sides first, holding the saw firmly and upright, but taking great care as you come to the end of your journey lest the wood should suddenly split. After having sandpapered each half they can be corked; and just now Woolworth's are selling very good cork mats, 18" x 12" x ⅜", for 6d. But failing this bargain, mats 8" x 11" x 3/16" can be bought from the same firm for 3d each, and fitted in. Otherwise, cork mat from a dealer will cost 1/6d. a side. It now only remains to put in a strip of 3 ply 2¼" wide round the inside of one of the halves, add a pair of hinges, and the store-box is ready to be papered. In fastening this strip, which will hold the box together when closed, it is as well to see that the nails used have been counter-sunk into the wood and covered with a spot of gum, thus preventing rust marks from appearing through the paper later on. The nails I always use are called veneer pins, 1" long for the frame and ¾" for fixing the ply. It is best to glue all joins, and an excellent tube-glue for all purposes is Certofix, also from Woolworth's. Finally, to give the work a finish, the box can be dusted thoroughly and given a coat of varnish.

TINS. If difficulty is experienced in lining tins with cork, the surface should first be well scratched with the point of a nail, and, after the first coat of glue, sprinkled over with silver sand. When this is dry, knock off the loose sand, and stick down the cork with another layer of glue.

DRAWERS. Some of us may not feel too sanguine as to our ever being able to afford that thirty drawer mahogany cabinet, and yet wish to display our specimens in a manner less clumsy than that of the store-box. If this is the case quite attractive cabinets can be made out of nests of drawers, the kind used in offices for papers. I kept a collection in this way for a number of years without it in any way suffering from mites or dust, although if glass frames were made to drop into the top of the drawers, specimens could be kept as airtight as in the cheaper makes of cabinet. These nests of drawers are usually sold in sets of four or six drawers, and cost from about 7/6d., i.e. music size 15" x 12" x 2", brief size 16" x 13" x 2". And if they are of a well known make more nests can be bought as the collection grows, and the drawers will be found to be interchangeable if necessary.

CAMPHOR. It is sometimes rather a problem to know how to fix a 'moth ball' in a store-box, so that it will not come unput as it decreases in size. After a great deal of research, I think the best method is to force a red-hot pin into the 'moth ball', when it can be stuck unobtrusively in a corner like the poor man in a dock - without any visible means of support.

PACKING. A member mentioned in a letter recently, that although he wrapped his boxes in thick felt when sending set specimens through the post, there were always some breakages. A method used by collectors in India might, therefore, be of interest. The box containing the specimens is placed in a slightly larger box, and the intervening space filled tightly with balls of crushed paper. Usually, of course, insects are sent home from abroad in papers, but micros. have to be set on the spot, and in this way they are safely transported even by mule-pack. As a further precaution, a strip of cotton wool pinned inside the box will collect anything that does break off, and prevent it rolling about and damaging the other specimens.

N. A. B. COLLYER.

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SUBSTITUTE FOOD PLANTS.

The following is a list of substitute food plants which I hope will prove useful to those finding larvae on plants which are difficult to obtain in one's immediate neighbourhood (substitutes in capitals):-

Birch, ALDER; ash, lime, poplar, APPLE; convolvulus, fuchsia, vine, BEDSTRAW; bramble, dogrose, rose, BILBERRY; alder, beech, hazel, spindle, whortleberry, BIRCH; hazel, heath, BRAMBLE; honeysuckle, lilac, vetch, veronica, BROOM; hop, CURRANT; nettle, privet, HONEYSUCKLE; buckthorn, elder, holly, IVY; elm, LIME; ash, elm, lime, whitethorn, willow, OAK; ash, honeysuckle, PRIVET;

bilberry, birch, heath, marjoram, oak, plum, primrose, yarrow, SALLOW; marjoram, pink, vetch, YARROW.

Universally favourite foodplants are very useful when the larvae remain unidentified; when they belong to the Geometridae, they will, in almost all cases, feed upon the Knot Grass (Polygonum aviculare) a very common but useful weed to ve found growing in most waste places. For noctuae, plantain, dandelion, dock, lettuce, clover, borage and goosefoot will be found very serviceable, while sliced carrot and turnip laid on moss are excellent foods for many noctuid larvae, especially those that feed in winter. To the above one may add that laburnum will feed all species whose natural food is broom; common laurel for lappet, poplar hawk and brimstone moths; lettuce for many of the lichen feeding "footmen" larvae, also withered leaves of sallow (moistened), raspberry and loganberry are splendid substitutes for bramble (for such species as emperor, fox, oak eggar, etc.); virginia creeper for elephant hawk and ermine moths, while mullein feeders will readily take to figwort.

A. HORDER.

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TAKING CUTTINGS.

I noticed in the July Bulletin (J.28, p.69) some remarks on the propagation of cuttings. Perhaps it might be of interest to members to know that Messrs. May & Baker Ltd., of Dagenham, Essex, make a preparation called "Seradix A" which is of very great assistance in producing roots on cuttings. It is actually a plant hormone. The cutting is placed in a dilute solution for approximately 24 hours, and then planted in the ordinary way. Roots begin to appear in most cases in about a fortnight and ultimately sprout from the bottom of the cutting in a compact mass. Cuttings can be taken at almost any time of the year and the percentage of success is very high, even with hard wooded trees. Growth above ground is also rapid once the roots have formed, and cuttings taken this year, for instance, would produce a much greater quantity of foliage next year than would normally happ The price of the preparation is, I believe, about 3/6d. for five liq ounces and this quantity is enough for a hundred to five hundred cuttings, according to size. With the prepara_tion is a wrapper giving details of the different solutions for different types of plants. As this preparation is produced primarily for gardeners and not entomologists, many of the plants and trees that would inte the latter are not mentioned. Messrs. May & Barker would, howeve I think, advise members according to their requirements, but person I have never troubled, as I have found that the different strengths of solution are not very critical.

D. N. PURSER.

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OBSERVATIONS

D.E.Newman (126) has sent some notes on his captures in Jul In Chessington woods he took fresh hutchinsoni, the pale summer for of c-album, the Comma butterfly. The Purple Hairstreak, T. querc he found commonly flying in the sun over oak trees; about a dozen v flying round the tops of a young ash tree, and, having a younger brother handy, the latter conveniently climbed the tree and bent it over so that it came within reach of the net some six feet off the ground - a total of six perfect females and one male being the result of the capture. w-album, The While Letter Hairstreak was again not noticed at its haunt near Oxshott, where it was not uncommon three or four years back. Limenitis camilla, the White Admira very common a year or two ago, also seems to have become much rarer in the district, he having noticed very few on the wing this year - as a rule it was not difficult to see a hundred in some parts of the honeysuckled hedgerows. Mr. Newman has taken the black form of this species at Ashtead, although it occurs pretty well wherever the species is found in that part of Surrey. On two occasions he saw what might have been Nymphalis polychloros, the Large Tortoiseshell, and he comments on the rarity of this species, wondering whether it naturally breeds now in this part of the country. (The Editor has seen - but not taken - this butterfly at Ockham and Bookham, but has no records of anyone having taken the larvae here within recent years). The Small Copper, C.phlaeas, seems to have regained its lost abundance, Mr. Newman having noticed about two dozen at Ashtead on July 30th, flitting along a woodland ride - about half of them were the blue-spotted var.coeruleopunctata.

G.H.W.Cruttwell notes Noctua glareosa (Autumnal Rustic) in abundance in his district (Frome, Somerset) on the heather - quite a new find for the locality. B.A.Cooper notices that the larvae, which are abundant locally pretty well all round London in April and May, have a special liking for broom and greenweed (Genista and Cytisus).

E.T.Daniels writes that he took a female Ruby Tiger on April 10th, which laid 25 eggs, the larvae emerging on the 25th April. Exceptionally early Orange Tips were seen in Norfolk on April 4th, 8th and 11th, and a Comma was noticed near Norwich on 12th March - the first spring record for Norfolk for over 50 years.

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CHANGES IN LIST OF MIGRANT RECORDERS.

The 1938 list of Recorders (South Eastern Union of Scientific Societies Bulletin No.71) has just been received. The following changes occur:-

ESSEX - W.P.Seabrook, "Branwoods", Great Baddow, near Chelmsford.
NOTTS - H.S.C.Halton, B.Sc., Curator, Natural History Museum,
Wollaton Hall, Nottingham.
SALOP - J.T.Wattison, F.R.E.S., F.G.S., 8, Abbey Foregate, Shrewsbury.
LANCS - H.W.Wilson, 27, Mayfair Avenue, Great Crosby, Liverpool, 23.
WESTMORLAND & FURNESS - Rev.E.J.Nurse, M.A., F.R.G.S., The Rectory,
Windermere, Westmorland.

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REPORTS OF FIELD MEETINGS.

Space forbids the regular publication of field meeting reports, but below are samplers to show what may be expected on the Society's rambles. The first two meetings were unfortunately badly attended owing to the fact that the Bulletin advertising them was late in appearance; nevertheless, those who had received notification of their occurrence commented on the exceptional number of species which they met with.

The next meeting was held at Benfleet on August 28th. Heavy rain in London looked ominous, but the sky had cleared by the time the party met. A cheering opening to the meeting was the finding by Mr. Cooper on the station palings of a fresh specimen of A.marginepunctata (Mullein Wave) and unmistakeable signs (no larvae, however, were found) of the presence of C.elpenor (Elephant Hawk) on Epilobium in the station yard. Owing to the absence of the official leader, Mr. C. H. Hards led the party. Shortly after leaving the station Messrs. J. E. Knight and B. Hilliard managed to take normal males and female helice of the Clouded Yellow (C.croceus). Messrs. H. C. Harris and W. C. Roberts busied themselves for awhile collecting pug and noctuid larvae from Yarrow and Ragwort flowerheads. Apart from Common Blues, Wall, Gatekeeper and Meadow Brown, very little was seen until the Artemisia banks were reached, when larvae of the Essex Emerald (E.smaragdaria) were met with commonly in patches of a few yards - no doubt where the parent had laid a batch of eggs. Rain then commenced, and after lunch it was decided to return to the town. On the saltmarshes the only butterflies seen were Large and Green-vein Whites (P.brassicae and rapae), which seemed remarkably active in the net (?immigrants), groups of Common Blue (P.icarus) and Small Heath (C.pamphilus), while a number of both sexes of the dragonfly Sympetru sanguineum were seen flying low over the grasses. Each member of the party took several larvae of the Lappet (G.quercifolia) and Chinese Character (C.glaucata), among other things, off blackthorn bushes, and several Yellow Belle (A.ochrearia) larvae were taken from grass, orache and wormwood. Several species of noctuid and geometrid larvae were taken in quantity off the Atriplex and other marine Chenopodiaceae. A very small and pale Rosy Rustic (H.micace was taken here with H.paludis (Marsh Ear), and the peculiar plume A.benneti, flushed from the patches of Statice limonium - Meyrick does not mention Essex as a haunt of this species. After a pause for tea the party proceeded along the hawthorn and sloe hedges beatin for larvae. Apart from the Brown Tail (E.chrysorrhoea), webs of which occurred every yard or two, the commonest larvae was the Yellow Tail (P.similis) and the Short Cloaked (N.cucullatella) and the Brimstone Moth (O.luteolata). Several more Lappets and glaucat (fresh imago and young to full grown larvae) were taken with one or two Oak Eggar (L.quercus). The most astonishing capture was two young larvae of the Pale Oak Eggar (T.crataegi), imagines of which are normally out at that time of year, their eggs not hatching till April when the caterpillars are sometimes common on these hedge Several other common or unidentified larvae were found on the hedges and low plants. The party dispersed at about 6 p.m. after an enjoyable, if wet, expedition.

B. A. COOPER.

The following field meeting took place on September 11th, 1938 at Chorley Wood, Bucks. Messrs. C. Down, D.T. Lees-Smith, R. Hilliard, J. E. Knight, H. C. Harris and B. A. Cooper, the leader were present. Beating for caterpillars was the order of the day, so little attention was paid to other stages. The first catches included D.coryli (Nut Tree Tussock), O.luteolata (Brimstone Moth), I.prasinana (Green Silver Lines), S.tetralunaria (Purple Thorn), E.dolabraria (Scorched Wing) and N.dromedarius (Iron Prominent) from the beech woods. Seen on the wing were the Speckled Wood (P. egeria) (fresh), Brimstone butterfly (G.rhamni), Red Underwing (C.nupta) - flying in the sun high up round oaks - and males of the Vapourer (O.antiqua). Although it was hot, so much so that one member, ostensibly looking for larvae, took off his shoes and spent several refreshing minutes wading through a willowy brook - there was little sun to get butterflies on the wing. From a plantation of Scotchfir, larch and spruce were taken larvae of a Telephrosia - probably bistortata - some Thera or other (Pine Carpe E.lariciata (Larch Pug) and B.piniaria (Bordered White). On hedg the commonest larvae were Yellow Tail (P.similis), C.glaucata (Chine Character), N.cucullatella (Short Cloaked), I.lactearia (Little Emerald), C.pusaria and exanthemata (Common and Common White Waves) M.persicariae (Dot). On the wych elm in the woods again were tak A.sylvata (Clouded Magpie) caterpillars in such [illegible] that the party had taken all they needed to rear a good [illegible] within two minutes of first finding the species. Every tap of the beating [illegible] brought down half-a-dozen larvae - and no sapling was free from th all stages from a quarter of an inch to full grown were to be foun among them. [illegible] -feeding larvae [illegible] A.blomeri (Blomer's Rivulet), O.luteolata (Brimstone Moth), [illegible] strigata (Com Emerald) and some pug larvae. In a sallow clump two A.psi (Grey Dagger) larvae were found on a bush which the previous day had furnished five S.ocellatus (Eyed Hawk) caterpillars. The party t rambled back to the station after a very pleasant day's outing.

Four of the party then decided to sugar a nearby lane to see what the district might bring forth. Certain telegraph posts which had been sugared the night before produced about twenty moths each, of which, as might be expected, three-quarters were N.xanthographs (Square Spot Rustic). Other abundant species were the Coppoer Underwing (A.pyramidea), Mouse (A.tragopogonis), A.ipsilon (Dark Swordgrass), T.pronuba (Yellow Underwing), P.meticulosa (Angleshades) and A.circellaris (Birch)½ Less frequent, but still common, were A.segetum (Turnip), A.saucia (Pearly Underwing), T.orbona (Lesser Yellow Underwing), N.plecta (Flame Shoulder), N.c-nigrum (Setaceous Hebrew Character), E.protea (Brindled Green), X.fulvago (Sallow) and M.gilvago (Dusky Lemon Sallow); other species found at sugar were N.glareosa (Autumnal Rustic), T.fimbria (Broad-bordered Yellow Underwing) and C.quadripunctata (Pale Mottled Willow). Two members who had promised to be home by ten thirty found some T.popularis (Feathered Gothic) in the phone box while phoning their altered arrangements. L.testacea (Flounced Rustic) and a few carpets were the only captures at light. A short way away in a marshy spot captures were very similar, with the exception of L.pallens (Common Wainscot) and C.nupta (Red Underwing) common here. Also taken were M.brassicae (Cabbage), H.rostralis (Buttoned Snout) and O.ochracea (Frosted Orange), all in perfect condition. The commonest larva feeding on the reed was that of A.unanimis (Small Clouded Brindle) - very common this year. The meeting officially closed at 1 a.m. when moths were still arriving fast at the sugar, all patches being well attended, and when a number of S.urticae larvae found showed the presence of the Water Ermine in the district. We hope that the attending members did not blame the A.E.S.for sleepiness at work later that day!

B. A. COOPER.

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FOR SALE - 68 drawer cabinet, size of drawer 18¼" x 16", well made, good condition, glazed, corked and papered. What offers? Apply B. A. COOPER, 61, OKEHAMPTON ROAD, LONDON, N.W.10.

A. E. S. Annual General Meeting to be held on Thursday, November 3rd at 7 p.m., at the London Central Y.M.C.A., Kinnaird Room, Great Russell Street, Tottenham Court Road, W.C.1 (see map in September issue). Please bring an exhibit if you can and help to make the attendance high.

MEMBERSHIP CHANGES.

ewcomers:-

No.191 - F. J. O'Rourke, 45, St. Kevins Park, Dartry Road, Rathmines, Dublin, Ireland (Hymenoptera, especially ants and wasps.

192 - P. J. Cent, 34, Castle Street, Wellingborough, Northants. (Lepidoptera).

193 - K. J. B. Wlark, 62, Doncaster Road, Leicester. (Coleoptera & Lepidoptera).

hange of address:-

84 - D. H. Sterling to: 36 Estella Avenue, West Barnes Lane, New Malden, Surrey (as on cover of last issue).

No. 97 - A. J. Dake to: Edenville, Springbok Road, Greenpoint,
Cape Town, South Africa.
37 - A. H. Pickett to: c/o G.P.O., Kingston, Jamaica, B.W.I.
77 - W. N. Roberts to: 48, Bishop's Mansions, Bishop's
Park Road, London, S.W.6.

PRESENT TOTAL: 169.

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WANTS & EXCHANGES.

Wanted - as many Plusia gamma as members can send; condition immaterial. Please state how killed. Booth Museum, Dyke Road, Brighton, 5, Sussex.

D.T.Lees-Smith (180) would like to give one pair of set E.antiopa (Camberwell Beauty) per person in exchange for pupae of following:- P.machaon (Swallowtail), L.sinapis (Wood White), Callophrys rubi (Green Hairstreak) or all the Sphingidae (Hawk Moths). Only nine pairs to be had.

B. A. Cooper (19) has ova of E.fuscantaria (Dusky Thorn) for exchange. Wanted - other ova.

G. Burt (48) has young stick insects for exchange. Anything in return, or will give them away if nothing is available.

The Keeper of the Department of Entomology, British Museum (Natural History), Cromwell Road, London, S.W.7. has now had duplicated a list of the Lepidopterous larvae required by his department. A large number of these are common species which even the beginner should be able to provide for the National Collection. Anyone who is willing to help may obtain the list by writing to the Department. The Museum will be willing, and in fact glad, to defray any expenses that may be incurred by anybody who sends material in response to this appeal, either by cash or by the offer of duplicate material from their collections.

JOURNAL OF BOMBAY NAT. HIST. SOCIETY. N. A? B. Collyer (132) has 50 unbound parts of this Journal, including 7 complete volumes of 5 parts each, which he would be glad to exchange for books on British insects (especially micros.), or British wild life of any description. Each part has two or three articles on Indian Leps., including micros., and many coloured plates. Other orders of insects described, together with all kinds of Indian fauna and flora. Exchange value 30/- plus carriage.

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NOTES ON FOODPLANTS - FENNEL (Foeniculum vulgare)

This will, of course, be grown primarily to feed the larvae of the Swallow-tailed Butterfly (Papilio machaon). Fennel is a perennial herb and its leaves are used for sauces and garnishing. I find that the best way of growing it is to sow a few seeds in a six-inch pot and to sleeve the caterpillars by means of muslin.

The seeds should be sown an eighth of an inch deep in March or early April and carefully watered; herein lies the difficulty of growing seeds in pots, i.e. watering, as the pot should receive attention daily or the freshly germinated seedlings are liable to perish in a very short time. To reduce this [illegible] the pots can be plunged in soil or ashes up to the rims, and th[illegible] more even moistur content will be maintained in the pots.

Seeds can also be sown in the open ground in drills a quarter of an inch deep, in case the supply in the pots should run out at a critical time.

Carrot forms a good substitute for Fennel, though I am convinced that the caterpillars do not grow half as quickly on carrot as they do on Fennel. It is also sometimes difficult to get the parent demales to lay on carrot, especially if these females were not themselves reared on carrot. Seeds of carrot can be sown in pots similar to Fennel or young seedlings potted up from the seed bed.

Should any member like to have a few seeds of Fennel I shall be pleased to despatch them on receipt of a stamped addressed envelope.

R. C. DYSON, N.D.H.

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IS THE GIPSY MOTH EXTINCT IN BRITAIN?

In "Moths of the British Isles" in reference to this species Richard South writes, "There appears to be no doubt that some time near 1840 the Gipsy moth began to decrease in numbers, and that about 1850 it had almost or quite ceased to exist as a wildling in England". Edward Newman in "British Moths", written soon after 1860, gives a very accurate description of the caterpillar and says he is indebted to Mr. Thomas Hackett for those he has described, and seems to regard it as more common than the next species - the Black Arches - which he says is "not uncommon". Kirby, writing between 1878 and 1882 in his "European Butterflies and Moths" states that "Ocneria (= Lymantria = Liparis) dispar is abundant in most parts of Europe ..... but is very scarce in England". This, it will be noticed, is about 20 years later than the date mentioned by South when it was supposed to be extinct, and only kept as a species by entomologists rearing it from eggs.

Somewhere about 1882 I obtained a fertile female which laid numerous eggs in the usual way round a twig, covering them with her own down. These hatched out the following spring and produced many moths. and although I have given away several I still have 35 of that brood.

In the early years of the present century (I think 1907) I came across some of the larvae feeding on a hawthorn hedge near Lyme Regis, but as I had plenty of the species I did not take any, being at that time unaware that it was supposed to be extinct. I regret not having done so and have never since met with it in any of its stages. I should like to hear if anyone has met with it at large in the last 30 years.

ED. F. HERROUN.

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A NEW ANT RECORD FOR HAMPSTEAD HEATH.

On April 12th 1938 K.M.Guichard found a number of worker ants wandering about in the Vale of Health, Hampstead Heath, without locating the nest. Two days later I visited that area and found a nest of Formica fusca var. rubescens, a species which has been recorded from Highgate many years ago, specimens being in the British Museum. collection. The finding of this none too common species may therefore be regarded as an exceedingly valuable and interesting capture.

It took me over an hour to dig up the nest, as it was situated on a sandy bank which had been well trodden down and which descended at least two feet into the soil. The upper chambers, around the roots of grass, contained the brood chambers, while the female ant was discovered at the last moment right at the bottom of the colony. Although a fairly careful, search was made, I could not discover any other colony.

The larger workers of F.fusca var. rubescens are quite distinct, being altogether bigger in build than fusca itself, and the whole body and legs are redder, while the smaller workers [illegible] resemble F.fusca var. glebaria so that one can often be misled in their identification unless the large workers are found with them. As these ants are more sturdy in build than fusca they are more fearless, and do not run and hide with such rapidity, behaving more like [illegible], although not employing their gasters to the same extent when spraying formic acid.

A. N. BRANGHAM.

ADDENDUM -

The Bulletin has been so slow in appearing this month that a further page has been made necessary to mention some of our recent doings.

The General Meeting was held at the London Central Y.M.C.A. on November 3rd, but we are sorry to report that only fifteen were present. No doubt this was partly to do with the fact that the next issue advertising it had not appeared, and for that our typisit sends his profuse apologies. Full details will be given in the next (December) issue, but the following must be dealt with here.

No-one raised any objections to the proposed union of the Entomological & Field Club with us, and the motion was carried nem. con. The next business was the consideration of the rules of the Society. The following changes were agreed to (Please correct the enclosed yellow supplement accordingly).

Rule 6a. Line one - the word "first" be changed to "last". This is because it had been decided that it would be more convenient if the financial year commenced on September 1st, and ended on August 31st, thus automatically separating one year's subscriptions from the next. It would also mean that the accounts for 1938 would be for a ten-month year (i.e. till October 31st), and next year likewise, after which twelve month years would continue.

Rule 7a. End of line four - that the word "financial" be inserte between "each" and "year".

Rule 7b. End of line ~~four~~ three - that the word "financial" be inserted between "each" and "year".

In accordance with Rule 8 on this sheet, members will be asked to confirm the approval of these rules before they are finally duplicated and sent to all new members. A further opportunity for discussion will be given in a questionnaire to go out with the subscription form in the next issue.

The new Committee of the Society was then elected. Since no-on had up to that time volunteered to accept the post of President of th Society, it was agreed that the question of the election of President and Vice-Presidents should be dropped. The new Committee is as follows:-

CHAIRMAN	S.G.Abell
GENERAL SECRETARY	D.H.Sterling
TREASURER	R.Hilliard
EDITOR	B.A.Cooper
BUSINESS MANAGER	J.E.Knight
ADVERTISING SECRETARY	C.H.Veale
MEETINGS SECRETARY	E.W.Classey
COMMITTEE MEMBERS	F.D.Coote T.G.Howarth E.Duffy

Messrs G.F.B.Prior and F.W.Byers kindly offered to audit the accounts which will be published in the December Bulletin. The question of Trustees was left in abeyance for the present until an inventory of the Society's property had been drawn up.

B.A.C.

FORTHCOMING MEETINGS

Friday ~~Dec~~ November 25th. 5.15 p.m., Organic Chemistry Lecture Theat Royal College of Science, Imperial Institute Road, S.W.7. A film the Lapland Expedition of 1938 will be shown by A.F.O'Farrell and others.

Fri. Dec 2nd, 5.15 p.m., Botany Lecture Theatre, [illegible], Prince Cons Road, S.W.7. A.Norman Brangham - A lecture with demonstrations - "A Psychoanalyst Looks at Hypnotism".

Thurs. Dec. 1st, 5.0 p.m., Zoology Lecture Theatre, University Collo Malet Place, W.C.1. Dr. A. Landsborough Thomson on "Bird Migrati Entrance free in every case.

THE AMATEUR ENTOMOLOGISTS' SOCIETY

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THE

ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF
THE AMATEUR ENTOMOLOGISTS' SOCIETY

VOL. 3 NO. 31 PRICE SIXPENCE DECEMBER 1938

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The next Bulletin, No. 32, should be sent out early in January. The first printed Journal, also No. 32, has just come off the press, but will be sent out with the corresponding Bulletin. Urgently wanted - Large numbers of names and addresses of people who might be interested in the Society, so that we may forward to them copies of the new Journal. Members may also obtain extra copies of this issue for the asking.

PRESIDENT - L.R.TESCH (our Founder)

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Edgware, Middx.

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HON. MEETINGS SEC.: E.W.Classey
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COMMITTEE MEMBERS:
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[illegible]
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- Published by the Society in London -

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THE ENTOMOLOGISTS' BULLETIN

THE JOURNAL OF THE AMATEUR ENTOMOLOGISTS' SOCIETY

Vol. 3 No. 31 December 1938

Dear Fellow Members,

Since the January Bulletin is to be sent out to a large number of people not yet members of the Society, the annual report and ballance sheet will be published in that and not the present issue as suggested previously.

In order to find out how our members first heard of the A.E.S. and also to compile a new card index, we should be glad if members would complete and return the enclosed "Membership Application Form" with their Questionnaire sheet.

On behalf of all the Committee I would wish every member a Merry Christmas and prosperity and good hunting in the New Year.

Yours sincerely,

BEOWULF A. COOPER
(Hon. Editor)

oOo

NOTES FROM SHEPPEY

The Isle of Sheppey is not often mentioned in despatches and received but little attention from our fraternity; it is only fifty odd miles from London, easily accessible and easily travelled over. The dimentions are about 11 x 4 miles and the land is largely flat nowhere thickly wooded except on the clayey cliffs. To make up for this deficiency, here are some of my observations for the last nine

To my knowledge no Privet Hawk (S. ligustri) has been seen he for about fifty years; we are in fact short of all hawks excepting the Poplar (A. populi), Eyed (S. ocellatus) and Humming-bird (M. st latarum), which latter was fairly plentiful in July 1934. Last year the Comma (P. c-album) joined us, and this year the migrants Clouded Yellow (C. croceus), Red Admiral (V. atalanta) and Painted Lady (V. cardui) have been plentiful, the native Orange Tip and Brimstone be much less so. Among moths the Red Underwing (C. nupta) and Angleshi (P. meticulosa - noted 25.11.37 and 25.4.38 as well as in autumn) w much more evident both last year and this. To these reappearances I must add the Swallowtail butterfly (P. machaon), which was observed here in a hot spell in June 1932.

I noticed a Cinnabar (T. jacobaeae) as early as May 8 in a garden in town. The Clouded Yellow appeared on June 4th and another was f on the sea shore on the 5th. I saw my first Brimstone (O. luteolat) on the 7th and the Yellow Shell (C. bilineata) appeared on the [illegible]. the 18th I saw T. amataria (Blood Vein), From June 24th to July 25t the Grass Emerald (P. pruinata); Later observations in town include Goat larvae Aug. 15-17 (C. cossus), Red Underwing Aug. 16-Sept. 8, Canary-shouldered Thorn (E. alniaria) Sept. 19- [illegible]. Some last appearances were Marbled Beauty (B. perla) on the [illegible] till Oct. 16 Marshmallow (O. cervinata) till Nov. 1st, November (O. dilutata) ti Dec. 6th, and Red Admiral till Oct. 26th. Of species noted, a drago fly Sympetrum vulgatum was still on the wi [illegible]

H. [illegible]NT (163

A friend of Mr. Grant's, Mr. J. Pollatt, says that he saw Papilo machaon in the district on Sunday July 21st 19[illegible]

NOTES ON FOODPLANTS - 4 - PLANTING

Now that the season for planting is here, breeders of Lepidoptera ho are contemplating the rearing of insects next year should make a ist of the foodplants they will require, and as soon as possible see o their purchase and planting out.

Although November is considered the best month for planting decduous trees, shrubs and herbacous plants, it is quite safe to plant t any time from now until the early spring, provided that a few simple ules are observed. In November the soil is usually in its most suitble condition for working, while at the same time it retains a certain mount of heat, thus enabling the roots of the plant to become estabished before the frosts and cold of winter arrive.

Therefore no planting should be undertaken in cold and frosty eather - should plants arrive from the nurseryman during a cold spell, ay them in the soil and well cover the roots until the weather becomes ore favourable. Mild open weather is desirable, and the soil should be n a friable condition for planting, easily worked, and not consolidating hen trod upon. Do not plant too deeply, but keep the level of the roots s far as possible the same as they were in the nursery - the original oil-level will be marked on the stem by a change in colour or texture f the bark. Plant firmly without ramming the soil into a solid mass ound the roots; a bucket of water will help to settle the soil and will revent the roots from drying out in droughty weather.

Here is a short list of trees and shrubs useful for a good many utterflies and moths which may now be planted:-

HRUBS:	Alder	Alnus glutinosus	
	Barberry	Berberis vulgaris	
	Bilberry	Vaccinium myrtillus	
	Blackberry	Rubus fruticosa	
	Blackcurrant	Ribes nigrum	
	Dogwood	Cornus sanguinea	
	Euonymus	Euonymus japonica	(evergreen)
	Fuschsia	Fuchsia magellicana gracilis or Riccartonii	
	Furze	Ulex europaeus	(evergreen)
	Heather	Calluna vulgaris or	(evergreen)
		Erica cinerea or tetralix	(")
	Juniper	Juniperus communis	(evergreen)
	Mock Orange	Philadelphus coronarius	
	Lilac	Syringa vulgaris	
	Privet	Ligustrum vulgare	
	Sallow	Salix caprea	
	Spindle	Euonymus europaeus	
	Snowberry	Symphoricarpus racemosa	
	Rose	Roas canina etc.	
	Tamarisk	Tamarix gallica	
	Wayfaring tree	Viburnum lantana	
	Guelder Rose	Viburnum opulus	
REES:	Apple	Pyrus malus	
	Ash	Fraxinus excelsior	
	Aspen	Populus tremula	
	Beech	Fagus sylvatica	
	Birch	Betula alba or verrucosa	
	Black Poplar	Populus nigra	
	Buckthorn	Rhamnus frangula	
	Cherry	Prunus avium	
	Elm	Ulmus campestris	
	Holly	Ilex aquifolium	(evergreen)
	Hawthorn	Crataegus [illegible]	
	Hazel	Corylus avellana	
	Holm Oak	Quercus ilex	(evergreen)
	Larch	Larix europaea	
	Lime	Tilia europaea	
	[illegible] Ash	Pyrus aucuparia	

Mountain Ash	Pyrus aucuparia	
Oak	Quercus robur	
Turkey Oak	Quercus cerris	
Plum	Prunus domesticus	
Scots Pine	Pinus sylvestris	(evergreen)
Sweet Chestnut	Castanea sativa	
Sycamore	Acer pseudo-platanus	
Wych Elm	Ulmus montana	
Yew	Taxus baccata	(evergreen)

Evergreen trees and shrubs transplant better if left until spring April of very early May being suitable provided the weather is favourat

The foregoing list contains the common type of each tree or shrub but there is no reason why the best forms should not be planted for garden effect. The foliage does not vary in any way as a rule, but the flower and fruit is often much finer in the improved forms. For instance there are many fine varieties of Philadelphus such as P. Boule d'Argent, P. Lemoinii, P. Virginal and others which are a fine sight when in flower; various types of Flowereing Currant will take the place of the edible Bladkcurrant, such being Ribes sanguineum, the American flowering currant, or R. atropurpureum. Ligustrum vulgare is the wild type but the privet to use in garden heidges is L. ovalifoi[illegible]. No comments should be necessary in the selection of roses!

Of the many beautiful species of Viburnum that could replace V. lantana I will mention V. carlesii, V. burkwoodii and V. tomentosum. Viburnum opulus sterile should be planted for the common Guelder Rose.

There are many wonderful species of cherry and plum to select from rather than the common forms. As improvements on the common hawthorn I would suggest Crataegus oxycanthae fl. pl., double scarlet, C.o.punica fl. pl., double pink; there are also single and double forms of white, as well as pink and scarlet.

Symphoricarpus racemosus laevigatus is a great improvement on the common snowberry.

For the common Furze it will be better to grow either Laburnum (L. vulgare), Broom (Cytisus scoparius), or one of the new coloured varieties of the latter for garden effect, such as C. andreanus, C. Dorothy Walpole or C. praecox. The common Barberry is, like the furz, very prickly; Mahonia aquifolium is a good substitute for this, particularly as Berberis vulgaris is a host plant for wheat smut. Likewise, Raspberry is much better to handle than its relative the Blackberry, and it will not need so much space to grow in.

There are many fine flowering shrubs that are an attraction for imagines and the following are specially recommended: Buddleia davidi (=variabilis), Lavandula spica, the Lavender, while the Sallow (Slaix caprea) and Andromeda (=Pieris) floribunda are [illegible] attractions during the spring period.

The evergreens are especially useful for species that hibernat Heathers are among the few evergreens that are best moved in winter, if possible without detaching the roots from the original peat mould; growing sphagnum moss amongst the roots helps to maintain the soil in a sufficiently acid condition for growth to be healthy. Of the introduced species, E. carnea, E. mediterranea and E. vagans and their varieties are worth growing.

It will be seen that a very charming and variable shrub border can be made up of excellent garden varieties which will also serve as foodplants when required. There are of course large numbers of varieties not enumerated in this short article, and for which grower lists should be consulted.

R. C. DYSON

Mr. Dyson adds that he has not mention[illegible] species he has to feed best on which plants, as he hopes that [illegible] will start some correspondence on the subject of substitute foodplants and thus create more discussion through the pages of the Jou[illegible] may be added that the list of substitutes given in the last issue is by no means infallible but it should serve as a helpful guide in the rearing of most specie.

TAKING CUTTINGS

In connection with Mr. Purser's note in the last issue (J. 30 p. 89), I should like to mention that it has been known for very many years that very dilute acetic acid (i.e. dilute vinegar) possesses root-promoting properties, and its use has often been recommended to horticulturists. It is at present by no means clear whether the complex chemicals such as beta-indole-acetic acid and other synthetically produced substances are any improvement ~~s~~ on the old-fashioned stimulant, although experimental work which has been carried out rather indicates that they are. Far from being a panacea for all propagating difficulties, by the help of which roots may be expected to appear promptly in a fortnight, it seems that those plants which present most difficulty to experienced cultivators are in most instances precisely thosewhich show least response to the application of chemicals which induce root formation. In other words, the degree of response exhibited by plants appears to be more or less proportional to the ease with which they root without special treatment. However, there can be no doubt that members will find these substances valuable for inducing and accelerating root formation in foodplants which they may wish to grow.

B. A. C.

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A number of living cocoons of American & Indian Silkmoths - Particulars from:
A. FORD, 42, IRVING ROAD, BOURNEMOUTH, HANTS.

IS THE GYPSY MOTH EXTINCT IN BRITAIN? - (See J. 30 p. 94). Robert Adkin (Moths of Eastbourne I p. 23) includes Lymantria dispar in the Eastbourne list on the strength of an evidently [illegible] bred female that he took at rest on an elm tree in the town on [illegible]th August 1909, but he does not regard the species as a regular inhabitant of the area. ED.

A TRIP TO EPPING FOREST

In the middle of September I spent two days in Epping Forest, Essex. This short article is an account of the collecting and a list of the species observed. No lengthy list of rarities is appended as, in fact, none were taken, but none the less it should prove of interest to members who intend to collect at this time of the year.

The first expedition was made on the night of the 21st; trees were sugared in the forest near Theydon Bois. It had rained all day and at dusk there had been an exceptionally heavy downpour and the foliage was sodden, while the wind was from the south west and the sky threatening. About fourty trees along the side of a road were sugared, after which the fun began. The first comer was an old friend, the Brick (circellaris) and on the second tree was a Copper Underwing (pyramidea) and a Beaded Chestnut (lychnidis). A little further on the Red Underwing (nupta) sat quivering its wings. On other trees we obtained the Pearly Underwing (saucia), Chestnut (Orrhodia vaccinii), Dark Sword Grass (ypsilon), Lunar Underwing (lunosa), Setaceous Hebrew Character (c-nigrum), Turnip moth (segetum), Square Spot Rustic (xanthographa), one very ragged specimen, and finally that supposedly common moth the Merveille du jour (aprilina), which I had never taken before; surely this is the loveliest of all our autumn moths?

The morning of the 22nd dawned bright and warm, but the wind, still from the south west, was stronger than it was the previous day. During the morning I noticed the Red Underwing (nupta) and the Small Dusty Wave (virgularia) sitting on fences, while in gardens the Dahlia were being visited by both Large and Small Whites (brassicae and rapae) Red Admiral (atalanta) and Small Tortoiseshell (Aglais urticae). In the afternoon I went into the Forest with a beating tray. I tapped a few trees and, finding that beech seemed to be giving the best results, I decided to confine my activities to the borders of beech woods. Last year I obtained good results in the Forest from birch at the sam time of year, but it seems useless to count on one year's dates for the following year's collecting, as all the species which I obtained last year from birch must have already pupated. The commonest larva by far was the Green Silver Lines (prasinana), while the Maiden's Blush (punctularia) was an easy second; other species taken include: Pale Tussock (pudibunda), Barred Hook-tip (cultraria) and Clay Triple Lines (linearia). Strangely enough, during the whole of the afternoo despite the beautiful weather, no Macro-lepidoptera were seen - perhaps a portent of the evening's collecting, for the least said about that the better! Forty trees were carefully prepared in a delightful forest glade - the result - nil. Not a moth of any description, nor even a midge! The only Lepidoptera seen were one Yellow Underwing (pronuba) and one specimen of the Brick, apparently both enjoying themselves feasting on dead bramble blossom. After the [illegible] at sugar I spent some time searching for larvae of the Elephant Hawk moth in a spot where they had been abundant the previous year, but they too had gone down, so I returned home practically empty handed.

E.W. CLASSEY

oOo

NOTE: In reply to members' questions, the Editor would like to state that he is NOT the man who used to take such large bags of the White Admiral in the New Forest a good many years ago; neither is he another who used to be interested in entomology [illegible], nor even a relative of one whose specimens were figured in the 'Entomologist' for March 1878. It is possible that he may have been seen marching down Exhibition Road with an immense [illegible] not under his arm, but it is not habitual. He does not as a rule wear a [illegible] and expects not to be possessed of a board for at least another fifty y
N.B. - These matters are not discussed under the heading "Queries".

ED.

A BEGINNER IN ANGUS, SCOTLAND

Dundee, on the banks of the Tay, perhaps only brings to your mind thoughts of jute, but to anyone interested in naturestudy, entomology or sport it is an ideal centre. It costs only a few pence to travel out from my home to the places I mention in this short discourse to follow.

Today let us fo east to Monifieth, where a small stream, the banks of which are covered with such vegetation as nettles and thistles runs into the river. Trees, unfortunately, are very few. On a sallow, the only one for quite a distance, you are sure to find the larvae of the Puss Moth (D. vinula), and occasionally September Thorn (E. erosaria). (South says "has been recorded from the south of Scotland" - are you sure the identification is correct here?} ED.). On very fine days (which are unusual) butterflies are well represented - the Pearl Bordered Fritillary (B. euphrosyne) may be taken, with occasionally a Dark Green Fritillary (A. aglaia). Ringlets (A. hyperanthus), the Small Copper (C. phloeas) and Common Blue are generally plentiful. Later come the Red Admiral (V. atalanta) and Painted Lady (V. cardui). This year, however, the weather has been so poor that very few Red Admirals have been seen, and as far as I know, the Painted Lady not at all.

To the north lie the Sidlaw Hills, carpeted with heather and low vegetation, but unfortunately I have not found time to work this area yet. Among several places that I have tried is a small copse by the roadside about three miles from my home. Here, although I only took up bug-hunting this year, I have taken with the net, and at sugar - the latter being very well attended - a great variety of species, including the Gold Spangled (P. bractea), Knot-grass (A. rumicis), Lesser Yellow Underwing (T. orbona), Lesser Broad-Border (T. ianthina), Spectacle (A. tripartita), Satellite (E. satellitia), Dark Swordgrass, (A. ypsilon), Angleshades (P. meticulosa), (the two latter very common), Rustics, Marbled and Rosy Minors (M. strigilis and literosa), Gothics and many others as well, but being a beginner there are many of which I am not sure.

To the west lies the Carse of Gowrie. Although greatly cultivated, moths and butterflies are very plentiful on banks of burns and in small thickets. A friend of mine who lives in this district has a very fine collection, and you may be sure I visit him very often. Here one may capture the Garden Tiger (A. caia) commonly, and also an occasional Grey or Dark Dagger (A. psi or tridens), Peach Blossom (T. batis), Merveille du jour (A. aprilina), Sharks (C. umbratica and chamomillae), Sallow and Pink-Barred Sallow (X. fulvago and lutea) and many others. On the hills above the Carse you may capture the Artaxerxes Butterfly (L. astrarche artaxerxes), the Wood Tiger (P. plantaginis) and the Beautiful Yellow Underwing (A.myrtilli). If you have keen eyesight you can discover larvae of the Emperor moth, very difficult to see on the heather. My friend, who I must say is a real nature lover, informs me that about eight years ago there was a big immigration of Clouded Yellow butterflies in the district - he got about a dozen himself - and strangely enough he has never seen them either before or since. His house is so well situated that on summer evenings, when the windows were open I have seen half a dozen species fluttering about the room. In this way he ahs captured many good specimens without stirring from his own fireside.

On the south bank of the river lies Tentsmuir, an ideal spot in which I hope to concentrate next year, so you see I have much to look forward to - what surprises are in store I cannot imagine, as very little of the district around Dundee has ever received the attention of the bug-hunter. You may be sure I will keep you informed if anything unusual turns up.

An thus ends my somewhat brief account of my collecting experiences to date, which I hope may encourage some southerners to come northwards at holiday time and sample what these unworked parts hold in store. Besides entomology, there are ample other attractions for the nature lover and sportsman. For the angler I need only mention that there are nearly a dozen rivers of fair size within a radius of twenty miles, the best-known of which is the Isla, containing trout, grayling, pike and perch. There are numerous burns from which you can be assured of a good day's sport. The fishings are free, or at most five shillings per season.

GEORGE COUTTIE (206)

oOo

NOTES OF A NOVICE

A comparative novice, I started sugaring for moths for the first time last summer. At first I used a mixture sold byy a naturalist's shop, but when this was finished I made my own from brown sugar, cider, beer, and amyl acetate. The first night was a failure owing to my inability to hold the torch and box the insects at the same time to avoid this happening again, I cut a torch in half, joined in to a battery with some flex, and sewed some elastic round the bulb-holder. This fitted neatly over my head, leaving both hands free, and shining the light wherever I looked.

The next night was a great success. I caught over seventy moths many the same, but this is unavoidable in the dark. I then went away on holiday, and when I returned there was a competely new set of moths out and my specimens increased accordingly, and I became quite skilled at boxing them.

Unfortunately school cut short the rest of my sugaring and I went back with a very successful holiday's sugaring behind me. There are, however, a few notes I would like to add which are probably well-known but nevertheless might be new to some people. (1) More of the moths were taken on trees by the water than anywhere else, this possibley being because the weather was very dry and moths like a high humidity. (2) Very few of the moths were caught inside the wood, most being taken on the outskirts, with the exception of the Red Underwing, Copper Undersing and Old Lady which were only caught inside. (3) Buddleia bushes were far better as a lure than sugar, and I counted as many as twenty five Yellow Underwings on one spray alone. (4) There were more moths at the top of the sugar streak than elsewhere, possibly because the sugare was thicker there and had been on longest. (5) Cold nights were as good, if not better, than warm evenings. These notes refer to my home locality which is along a river valley near Guildford in Surrey.

It might be of interest to readers if I gave a list of the species I caught most often. These were: Buff Arches (H. derasa), Burnished Brass (P. chrysitis), Large Yellow Underwing (T. pronuba), Lesser Yellow Underwing (T. comes), Lesser Broad Border (T. ianthina) Red Underwing (C. nupta), (these were especially common), Copper Underwing (A. pyramidea), Old Lady (M. maura), Angle Shades (P. meticulosa), Square Spot Rustic (N. xanthographa), Knotgrass (A. rumicis), Dunbar (C. trapezina) and Smoky Wainscot (L. impura).

B.N.[illegible] (66)

oOo

A RELEASED BUTTERFLY? - W.N.Roberts states [illegible] a Red Admiral (V. atalanta) at rest in warm sunshine [illegible] 8th 1955 at Highgate, London N.6 which had the rear th[illegible] the left hindwing denuded of hairs. He wonders whether this had [illegible] released by a member in an effort to trace out the movemen[illegible] butterflies, and that the number which the insect had been g[illegible] might [illegible] dropped off for some reason or another. Will anyone interested please communicate with Mr. Roberts direct?

INSECT WIRELESS

G.J.Eade (No. 190), writing on October 23rd, sends us the follow-
in cutting from the previous week's issue of "Wireless World", sug-
ge ting that it might form a suitable topic for discussion and line
of experiment which members might like to pursue. Acknowlegements are
du to the above periodical.

"THE MOTH PROBLEM - You may remember a discussion in these notes
no long ago about the possible effects of a radio field on the direc-
in-finding qualities of certain species of moths. Male moths of
rtain species will come very quickly from distances of several miles
o a gauze or a muslin cage containing a lady moth of their own kind.
t is generally held that they are guided by scent and the fact that
hy will sometimes come to an empty cage after the female has been re-
oed from it seems to confirm this view. But there is also the pos-
ility that radiation of some kind may play a part, and I have been
ring to find out whether any operators, amateur or professional, have
red the experiment of putting, say, a female Oak Eggar into a cage
ug close to a radiating aerial. So far I haven't been successful in
y quest, though one or two readers have promised to make the exper-
mnt next summer when the Oak Eggar season returns. Meanwhile, I
ae a letter from a Warrington reader who recalls hearing his Profes-
so of Natural History mention an instance which may have some bearing
n the matter. Moths of one kind were found to collect in masses
und the aerial of a ship anchored off Cape Town whilst transmission
a going on. I have written to the Professor and I hope that he will
us have some particulars." The author does not go on to suggest
ht anomalous reception on the short waves may be due to a cloud of
irants having settled on the transmitting aerial and broadcasting
ival programme to "jam" the station!

oOo

WANTS & EXCHANGES

G. Burt (48) has young stick insects for exchange. Anything in
eurn, or will give them away if nothing is available.

B. A. Cooper (19) has ova of the Dusky Thorn (E. *fuscantaria*)
fo exchange. Wanted - other ova.

JOURNAL OF THE BOMBAY NAT. HIST. SOCIETY. N.A.B.Collyer (132)
ha fifty unbound parts of this Journal, including seven complete vol-
ms of five parts each, which he would be glad to exchange for
ooks on British insects (especially micros), or British wild life of
an description. Each part has two or three articles on Indian lep-
idptera including micros, and many coloured plates. Other orders of
inects described, together with all kinds of Indian fauna and flora.
Exhange value 30/- plus carriage.

T.H.Fox (105) has for exchange: OVA: P.*populi* (December Moth)
P.*plumigera* (Plumed Prom).
(in Jan.)-and P. *pedaria* (Pale Brindled Beauty)
LARVAE: *syringaria* (Lilac Beauty)
PUPAE: *ligustri* (Privet Hawk)
elpenor (Elephant Hawk)
What offers?

Dr. G.V.Bull (160) has for exchange: L. *trifolii* (Grass Eggar) from
Ket; M. *gilvago* (Dusky Lemon Sallow); C. *vetusta* (Red Sword Grass);
L. *semibrunnea* (Tawny Pinion); E. *versicolor* (Kentish Glory)(Scotch);
E. *flavicinctata* (Yellow Ringed Carpet)(Scotch); L. *solidaginis*
(G ldon Rod Brindle); A. *helvola* (Flounced Chestnut); from four to six
of each. Wanted: E. *certata* (Scarce Tissue); T. *dubitata* (Tissue);
S. *lunaria* (Lunar Thorn); E. *quercinaria* (August Thorn);- in any stage
of their life-cycle.

S.Castle Russell (119) would be grateful for any copies of photos
of aberrations of British Butterflies,as he is making a collection of
th se. Address now: Cotswold, Forest Gardens, Lyndhurst, Hants.

REVIEW-

NATURE STUDY ABOVE AND BELOW THE SURFACE by H.C.Gunton, F.R.E.S., F.R.H.S.; 134 pp with illustrations (London: H.F.& G. Witherby Ltd., 7/6d net). This is a book well worth reading by all interested in insects, and will be found of especial value to those who are helping with the list of fifty indigenous Lepidoptera, issued in the April Bulletin.

The book is divided into four parts and shows how amateur entomologists can make their observations of real and lasting value. Following a preface by Dr. C.B.Williams, Head of the Entomology Dept. of Rothamsted Experimental Station, there is a useful Interoduction detailing the wide fields still open to the amateur for investigation in this field of science. This is followed by "An Amateur's Impressions of the Seasons" which includes a number of interesting reminiscences; one that particularly struck me was when the author, as a boy, spent a night on the roof of Colman's Mustard Works at Norwich, wherein "it appeared as if every large moth - and they are many - which occurs in that district had been lured from the marshes and woods. There were hawk-moths, lappets, tigers, puss-moths drinkers, prominents including buff tips and a lobster. Some were freshly emerged, while others were survivors from June, but all were of one mind on this wonderful July night as to the irresistible attraction of what was then a comparitively new and brilliant form of illumination".

Part II contains a great deal of useful and interesting information concerning such questions as those of protective resemblance, mimicry, hibernation, migration, attraction to light and assembling. This is followed by a detailed explanation of the use of graphs constructed from information sent in by observers, and the many intere ing facts gathered from the systematic use of these over a number of years. Parts III and IV show how economic entomology has been developed and how the knowledge gained has been applied to the control of pests, special reference being given to the tse tse fly as an example of how the work is carried out.

This is a book I would recommend to those who are interested in their hobby quite apart from the material one of building up a collection. It is very good propaganda for the carrying out of such amateur investigations as Major Gunton is himself leading.

A. HORDER

oOo

MOSTLY PUZZLES

I have been looking up some of my early note-books, and now fin them quite amusing. Here are some random extracts (if the Editor doe not blue-pencil them all!).

"15/5/28 - M.neustria (Lackey) larvae suffering badly from mildew; great care taken to rid them of it". I cannot remember the case and have not suffered from the complaint since. Were the larvae covered with mould? If so, how did I rid them of it!!

"13/7/28 - Humming-bird Hawk (M. stellatarum) seen flying in th garden, Finchley, N.3." Was this a good year as I have never seen on here since?

"18/4/29 - A Comma Butterfly (P. c-album) seen on sallow blossom in the New Forest". I have not seen it mentioned that sallow is attractive to day-flying Lepidoptera.

"3/8/29 - The day was cloudy and Common Blues and Brown Argus were abundant on grass heads. On walking among them they flew up in shoals and alighted further on". I wish I could find that place again - there might have been a few vars among so many.

"8/8/29 - A female Poplar Hawk (A. populi) tinged with yellow emerged; larva pupated end of June".

"16/8/29 - Purple Hairstreaks (Z. quercus) flying around abh tees high up". What was the attraction - is there any sweet substance rund the young buds.

"Buff Tip (P. bucephala) larvae fed on apple all died." Was this de to the food?

JOHN M. KNIGHT

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OPEN INVITATION to all members of the Society: B.A.Cooper will b at home on Wednesday January 4th 1939 from 3 p.m. to 10 p.m. and h hopes that members will take this as an informal meeting of the Sciety. It is suggested that younger members should come during the aternoon and those who are at work during the day, in the evening. Secimens welcomed for exhibition or identification. R.S.V.P. Buses 6 46, 52 (Mill Hill) and 231 to Kensal Rise Station (L.M.S. electric Rchmond to Broad Street line). Nearest tube - Queens Park (Bakerloo) -from where take 6 or 231 bus to Kensal Rise. Edgware and Finchley tolleybuses to Willesden Green Library, 6, 46 or 52 bus to Okehampton Rad. Willesden Green or Brondesbury (Metropolitan) Stations.

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Certain members complain that they have written for lists to Dnnis E. Ballinger, but have received no reply. The Editor has reason t believe that this may be due to the postal authorities, and he would b glad to have the names and particulars of members who have been teated thus, in order, should this supposition appear correct, that h may lodge a complaint with the Post Office and not with the dealer i question. We understand that Mr. Ballinger has a stall at the Shoolboys Exhibition (opens Dec. 27th) entitled "Beetle Byway".

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W.N. Roberts writes to say athat on certain Saturday morniggs a 11 o'clock there are very interesting instructional films shown a the Tatler News Theatre, Charing Cross Road, London. Among other sbjects, they deal with items of interest to the amateur entomologist. Pogrammes can be had obtained free on application.

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ERRATUM: J.30 p.88 4th paragraph should be headed "NAPHTHALENE" ad not "CAMPHOR".

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NOTES ON EXOTICS - Silk Moths' cocoons fall into two main casses - epen and closed. Open coccons are either spun in a rolled u leaf or between two or more neighbouring leaves, and the stalk ae attached to the twigs, so that they shall not fall in the autumn. Wen the moths are due to emerge, these cocoons should be strung on awire by their stalks. Closed cocoons have no apparent top (there are eceptions) i.e. the Antheraea family), and they should be pinned to asheet of cork, though care must be taken to leave space for emergnce at both ends, and not to pierce the living pupa within. The prpose of securing cocoons is to ensure that they shall not drag after te moth as it tries to emerge. Keep the cocoons in a cold cellar dring the winter.

PENTLAND HICK (143)

Mr. Hick has just produced an interesting little booklet entited "Giant Moths of the Jungle" (obtainable from the author at Ahol House, Scarborough, Yorks., price one shilling). The purpose c the book is to popularise the breeding of exotics, and much useful avice on this subject is given, to gether with some tips on what species t get and how to set them. The booklet, of twenty four pages, with sveral diagrams, is admirably produced, but is somewhat marred by a nmber of errors which could have been avoided by careful editing -B.A.C.

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The Editor has in hand a few observations sent in by members durig the year and hopes that he will have received more in time for te next issue. Present membership total is 177 - list in next Bul.